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ABSTRACT

Presented is the final report of a 3-year project in which an instructional program model was developed and implemented with 103 educable mentally retarded and learning disabled children (6-to 10-years old) in three Mississippi schools. General objectives of the project are said to include development of an experimental special education model which could be adopted by a school system and of a model curriculum involving individual and small group instruction. Noted are concepts on which the Instructional Program Model is based such as regular class placement (in non-graded classes), small group and individualized instruction, and instructional strategies derived following comprehensive diagnosis. Outlined in detail are the following curriculum units: math (Cuisenaire Rods), social studies ('Our Working World'), sciences, reading, language, and perceptual-motor skills. Examination of the project model includes job descriptions of the staff. Summarized are services and evaluation given by the medical, speech and hearing and psychological consultants, and by the social worker, and principals. Test data are analyzed to reveal the children's progress in reading, perceptual motor development, and intellectual and psycholinguistic abilities. A major finding reported was that 101 of 103 children involved in the program obtained achievement gains that would allow them to read independently as well as under instruction. (LS)

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FINAL PROJECT REPORT FY '72

GROUP AND INDIVIDUALLY PRESCRIBED INSTRUCTION FOR HANDICAPPED CHILDREN

Instructional Program Model

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ESEA TITLE III PROJECT NO. 34-6901-0
Aberdeen, Mississippi

EC073094

GROUP AND INDIVIDUALLY PRESCRIBED INSTRUCTION FOR HANDICAPPED CHILDREN

Instructional Program Model

Final Project Report

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CHAPTER I

INTRODUCTION

Traditional Special Education Model - Go or No Go?

Serious questions about the adequacy of the traditional special education model have been raised with increased frequency by special education personnel. The following statements express the concerns of professionals with current practices in special education:

> Studies by Blattand Cassidy found few significant differences between those children in regular classes and those in special classes. Not withstanding the valid criticisms of studies comparing special vs. regular class membership, it has yet to be demonstrated that the special class offers a better school experience for retarded children than does regular class placement.[1] (p. 53)
>
> There has been no reliable evidence produced to indicate that differential benefits, either social or academic, occur to regular students as a result of either the exclusion or inclusion of exceptional students in regular classes. However, even if differential effects were found favoring the former, a democratic philosophy would dictate that the most justifiable course of action in dealing with exceptionality would be the altering of classroom practices whenever possible, rather than the segregation of deviant individuals. The rapid growth of special classes, in the face of lack of either supporting evidence or acceptable democratic social philosophy, has but limited justification.[2] (p. 373)
>
> It is indeed paradoxical that mentally handicapped children having teachers especially trained, having more money (per capita) spent on their education, and being enrolled in classes with fewer children, and a program designed to provide for their unique needs, should be accomplishing the objectives of their education at the same or lower level than similar mentally handicapped children who have not had these advantages and have been forced to remain in the regular grades.[3] (p. 66)
>
> We are saying that grouping children on the basis of medically derived disability labels has no practiced utility in the schools. Children should be grouped on the basis of their education needs, and these needs may be defined in any number of ways. The notion that simple labels, applied by high status authorities from outside the schools, should serve as a basis for grouping children is basically nothing more than a refusal to accept responsibility for making educational decisions. It is educational laziness.[4] (p. 19)

The research cited above documents the concern of leading special education professionals about the adequacy of traditional special education models and supports the argument that pupils in typical special education programs do little, if any better, than similar pupils in regular classes.

Statement of the Problem

Traditional special education policies and procedures have been developed from a definition of exceptionality. Traditional definitions of exceptionality have been focused on the child and have been concerned with the identification of primary deficits of the child. A representative definition of the exceptional child is given by Dunn:

Exceptional pupils are those

(1) Who differ from the average to such a degree in physical or psychological characteristics,

(2) That school programs designed for the majority of children do not afford them opportunity for all around adjustment and optimum progress,

(3) Who, therefore, need special instruction or in some cases ancillary services, or both, to achieve at a level commensurate with their respective abilities.[5]

Children classified as exceptional seem to be ordered naturally into specified categories of deviance, usually according to a primary handicap, mental retardation, speech, emotionally disturbed, vision or hearing. Once classified, children have been segregated in special classes on the basis of a primary handicap. Thus, traditional special education programs have included classes for the educable mentally retarded, the trainable mentally retarded, the emotionally retarded, visually impaired, auditorially impaired, etc.

The situation is much the same in the Bureau for the Handicapped (BEH), U. S. Office Education. Likewise, the Division of Training Programs of the BEH has used special education categories for building its finding base.

Purpose of the Project

Title III P. L. 89-10 funds are awarded to school districts for the support of innovative educational projects. Fifteen percent of Title III funds are allocated to finance exemplary projects for handicapped children. Much concern, as indicated above, with traditional special education programming and the use of primary disability labels for grouping of handicapped children for instruction has generated interest in the formulation of an experimental design for the delivery of special education services to handicapped pupils.

The purpose of the project is the designing of an experimental model for the delivery of special education services to handicapped children.

Therefore, the general objectives of the project are as follows:

1. Development of an experimental special education model which could be adopted by a school system is a major objective.
2. Identification of skills needed by project staff, designing a pre-service training program, structuring a continuous in-service training program, and providing regular monitoring of instruction to provide teachers with skills necessary to operate an experimental model.
3. Development of a plan for the delivery of social work services which could maximize the full resources of the local public school, the county health department and the county welfare department for the highest academic, social, physical, and psychological adjustment of each pupil. Such a plan could serve to dramatically demonstrate the potential benefits to each pupil because of a close, effective working relationship between three major social

service institutions--the school, the county welfare department, and the county health department.

4. Development of a model curriculum which permits meeting the particular educational needs of the handicapped using individual and small group instruction prescribed after diagnosis of educational deficits is a major objective.
5. Development of a comprehensive diagnostic program for the assessment of the medical, psychological, perceptual-motor, audiological, speech, and educational modalities is a major objective.
6. Investigation of the question, "Can handicapped children be effectively instructed in a class where the pupils are not segregated according to their primary handicapping condition?"

CHAPTER II

SURVEY OF LITERATURE

The need for development of new special education models is supported by a recent publication by Reger, Schroeder, and Uschold which recommends a redesign of the traditional special education self-contained class. The authors present an approach that emphasizes an individual's educational and behavioral needs. These men state that:

> The label applied to the child serves as a sanction for administrative action, meaning placement into a special class or into some other special program. The whole procedure tells us nothing about a child that we did not already know because nothing was added to our fund of knowledge about the child, and we have no information about what to do with the child after placement changes are made (the justification for comprehensive diagnosis which provides information for group and individually prescribed instruction). Moving a child from one classroom to another is an administrative action: it is not an act of understanding or explanation.[6] (p. 16)

As noted previously, a major objective of the project is the development of an experimental special education model.

An instructional program, designed to serve an individual's particular educational and behavioral needs, is usually not part of the organizational plan for instruction in the typical classrooms. A promising innovation in organizing instruction mentioned with increasing frequency is "Prescriptive Teaching." Laurence J. Peter views prescriptive teaching as a process which employs an interdisciplinary approach to diagnosis, determines the educational relevance of the child's disability, and devises teaching strategies to yield positive results. It achieves this through a methodology based on a scientific formulation which relates the specific elements of the educational program to the diagnostic information. Prescriptive teaching emphasizes development of the areas of major deficits found in a child's diagnostic profile.[7]

Individual and group instruction based on comprehensive diagnosis form a base for an adaption of prescriptive teaching used in the project.

The interrelationship of perceptual-motor achievement, academic achievement and intelligence of children is the hypothesis of a study by Skubic and Anderson.[8] They report that scores on the perceptual-motor battery for all children in the study did correlate significantly with their California Test of Mental Maturity and Stanford Achievement Test Scores.

Educators, psychologists and neurologists today adhere to the theory of the integrity, unity and interdependence of mind and body. Such authorities as Piaget,[9] Ayers,[10] Olson,[11] Kephart,[12] and Gesell[13] stress the importance of perceptual-motor activity in infancy and childhood for the development of percepts and concepts. Bernstein, a Russian physiologist, has written of the

enormous biological significance of the motor activity of organisms and states that motor activity "is practically the only way in which the organism not only interacts with the surrounding environment but that activity also operates on this environment, altering it with respect to particular results".[14] (p. 111)

Training activities in spatial disorientation usually begin with teaching the pupil to orient to different parts of his body and then to his environment. Strategies for handling spatial problems are introduced whenever possible. Kephart writes:

> The early motor or muscular responses of the child, which are the earliest behavioral responses of the organism represent the beginning of a long process of development and learning. . .To a large extent, so called higher forms of behavior develop out of and have their roots in motor learning.[15] (p. 35)

Painter has studied the effect of a rhythmic and sensory motor-activity program on the perceptual-motor spatial abilities of kindergarten children.[16] The results of his study demonstrate that a systematic program of rhythmic and sensory activity will: (1) affect the level of ability to draw a human figure, (2) ameliorate the apparent distortion of body image concept, (3) improve visual-motor integrity, (4) improve sensory motor spatial performance skills, (5) improve psycholinguistic abilities, and improve the ability to express ideas motorically.

The research cited above supports the use of a balanced, sequential program of perceptual-motor training in the project. Details of the perceptual-motor program developed for the project will be presented in another section of this report.

CHAPTER III

CONCEPTUALIZING: SOME BASIC ASSUMPTIONS

The research of Cassidy, Dunn, and Reger cited in Chapter II above reveals a very critical evaluation of the traditional special education program and identifies the need for experimental special educational program models. In developing a new special education program for the delivery of special education services, Lilly advances the idea of a "Zero Reject Model" where the special education instruction specialist would serve a training function (training of the regular classroom teacher) only as a means of providing services to youth in need of special education services.[17] The model as proposed by Lilly is presented at the Conceptual level and is not specific concerning curriculum, teacher competencies, or procedures for implementation.

The Instructional Program Model developed as a component of this Title III ESEA project (grant number 6901) is antithetical to the model proposed by Lilly in that the Instructional Program Model is specific with regard to program content and procedures for implementation.

Some basic assumptions on which the Instructional Program Model is based are as follows:

1. Segregation of special education pupils into classes for instruction according to their primary disability (classes for TMR, EMR, ED, LD, Physically Handicapped, Visually and Auditorially Impaired) is an integral element of the traditional special education model. Studies of academic achievement of pupils segregated for instruction by primary disability show that such pupils do little, if any better, than those handicapped pupils assigned to a regular class for instruction. Thus, one basic assumption of this project is that pupils with different primary disabilities can receive instruction in the regular classroom with profit.
2. The second assumption is a corollary of the first. Pupils with different disabilities can be taught certain skills and understandings more efficiently by grouping them together for instruction.
3. Due to the uniqueness of their handicaps, some pupils with different disabilities should be taught certain skills and understandings through individualized instruction.
4. Insufficient diagnostic information regarding special education pupils has been a continuing concern of the State Special Education Office. The fourth assumption is related to this concern for diagnostic information. A comprehensive diagnostic workup to include psychological, academic, perceptual-motor, physical, speech and hearing, vision, and social summary data is needed to prescribe instructional strategies based on a comprehensive diagnosis.

5. A language deficit is common with most mentally retarded pupils. Results of the Illinois Test of Psycholinguistic Abilities administered to handicapped pupils included in this project have revealed that the language deficit of pupils with mental retardation is a primary disability. The fifth assumption is that a highly structured, sequential language development program is needed to build communication skills.

6. Results of the comprehensive diagnostic program confirm other research studies which show that handicapped pupils have perceptual-motor disabilities. The sixth assumption is that a sequential preceptual-motor component is basic to the instructional program.

7. The seventh assumption is that a balanced program of instruction be provided for all project pupils. Such a program of instruction would include: perceptual-motor training, language development, reading, arithmetic, science, social studies, behavior modification, and fine arts.

The seven assumptions given above provide the conceptual design for the development of the project. Management of the learning problems of pupils included in the project has been based on a wide range of information gained from the comprehensive diagnostic sequence and on the most recent experimental instructional procedures.

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CHAPTER IV

IMPLEMENTING: THEORY/REALITY: THE CURRICULUM MODEL

Designing the Curriculum Based on Diagnosis

A. Rationale

The Weschler Intelligence Test (WISC) and the Illinois Test of Psycholinguistic Abilities (ITPA) indicated, as expected, that the children selected for classes were deficient in language abilities. Other deficiencies discovered in the diagnostic procedure were (1) inadequate or no reading ability, (2) visual-motor inadequacy, (3) mixed laterality, (4) inadequate or no handwriting ability, and (5) inadequate quantitative abilities. Table A indicates how the test diagnosis was related to the instructional program. (See page 10)

We experimented with the following programs to see if they could help overcome the deficiencies in reading, handwriting, spelling, and oral language: (1) Distar Reading Program, (2) Distar Language Program, (3) Ginn Tutorial Program, (4) Write and See (Programmed Handwriting), (5) Peabody Language Program, (6) Our Working World, and (7) AAAS Science Program. All programs provided sound instructional procedures and were designed especially for language disabled children. Some children received instruction in both the Distar and Ginn programs; others only in one of the two. We discovered, for instance, that some of the children with auditory disabilities benefited from the Distar program, others did not.

Additional supplementary materials of appropriate difficulty levels and comparable vocabularies were fed into the reading program for independent work in reading. In addition, children had access to library books which they frequently checked out.

The "Distar Language Program" is designed to build in conceptual language and skills needed for discussion, reporting, and conversation. It is paced at the right rate for EMR children but has to be supplemented with other activities for learning disability children. Spelling is introduced in Level II of the program.

For the purpose of incorporating more technical concepts into the children's oral language, the "Working World Social Studies Series" and the "AAAS Science Program" were incorporated the first year. Neither program requires reading skills as a basis for acquiring the concepts.

The "Handwriting 'Write and See' Program" is programmed instruction developed by B. F. Skinner. It begins at level 1 with manuscript writing and makes the change-over to cursive at the end of level 2. The youngster, because of the specially treated paper, can identify his own handwriting inadequacies and correct them.

TABLE A

INSTRUMENTS	DIAGNOSIS	REMEDIAL PROGRAM
WISC ITPA	Language Disability	Peabody Language Kit Distar Language Our Working World AAAS Science Program Language-Experience Stories
Silvaroli Informal Reading Inventory	Reading Disability 1. Sight Vocabulary 2. Oral Reading	Ginn Tutorial Distar Reading SRA Linguistic Series Charles Merrill Skill-Texts Continental Press Reading-Thinking Skills
Neurological Organization Test Telebinocular	Visual Motor Inadequacy Mixed Laterality Inadequate fusion Poor handwriting	Mobility-Visual Pursuit Exercises Kephart Chalkboard Exercises Belgau Exercises Frostig Visual Perception Exercises "Write and See" Handwriting Program
Informal Arithmetic Tests	Inadequate quantitative concepts	Cuisenaire Rod

For building mathematical language and concepts, the "Cuisenaire Rod Program" was included. Cuisenaire rods use color and length for helping children discover quantitative relationships. They provide concrete material to help the children learn the major arithmetical operations. Children with normal ability are given instruction in the school adopted arithmetic program.

Perceptual-Motor Activities, undergirding the aforestated instructional programs, was a program of perceptual-motor activities to treat the disabilities that all the children exhibited in the diagnostic procedure that selected them for the class. It was hoped that the incorporation of these activities would increase the ability of the children to benefit from the instructional program. An hour a day was devoted to this program. Perceptual-motor activities were made up of: (1) cross-pattern mobility training, (2) visual pursuit training, (3) balance training with walking boards and balance boards, (4) ocular motility training, and (5) Kephart's chalkboard training for gross motor development. When the children indicated they had mastered the chalkboard work, they were given training in the five areas of visual perception defined by Marianne Frostig.

B. Scheduling Instruction

With only 12 children in each class, and with the assistance of the teacher aide, small group instruction and individual tutoring could be carried on at the same time.

The following was a schedule of a typical day for each of the classes:

8:00 - 8:10	Call roll, lunch money, and devotional
8:10 - 8:30	Group I Reading - Teacher Group II Cont. Press - Aide
8:30 - 8:50	Group II Reading - Teacher Group I Cont. Press - Aide
8:50 - 9:20	Arithmetic - Teacher Aide works with Kenneth White on his number names with the number symbols
9:20 - 9:50	Group I Language - Teacher Group II - Peabody Language Kit - Aide
9:50 - 10:30	Recess
10:30 - 11:30	Exercise - Teacher Frostig - Aide
12:45 - 1:00	Storytime or rest - Teacher or Aide
1:00 - 1:30	Group II Language - Teacher Group I - Peabody Language Kit - Aide
1:30 - 2:00	Handwriting - Teacher Aide works with two that are just learning to write their names
2:00 - 2:30	Monday, Tuesday, & Thursday - Social Studies Wednesday - Art Friday - Library (During this time, aide usually does clerical work)
2:30 - 2:40	Clean room and go home

Mathematics with Numbers in Color: Cuisenaire Rods

A. Overview -- What is it and why was it developed?

The grasping of mathematical concepts is not the beginning and end of mathematical ability. Such ability demands besides the understanding of concepts, a knowledge of mathematical language, symbols, methods, and proofs.

There are two existing theories which define the process that a child may apply in arriving at an understanding of natural numbers. Some mathematicians, for example, H. Pioncare, believe that at some point in learning, the idea of a series of natural numbers become clear to a child. Then people believe that the concept of natural numbers is the result of primitive intuition. Others think that certain logical concepts have to be acquired before a grasp of numbers is possible. This is the view of Piaget whose research shows that, "number is organized, stage after stage, in close connection with the gradual elaboration of systems of inclusions and systems of asymetrical relations, the sequence of numbers thus resulting from an operational synthesis of classification and seriation." Educators differ about the kind of approach which is best in developing number concepts in children. When dealing with instruction in natural numbers, some people think it is best to use a verbal approach to teach mathematics. The activity approach offers an acceptable approach to concept formation because it promotes learning by doing. Objects should be presented in such a way that discrimination, abstraction, and grouping are aided: the child must be able to classify, arrange in order and compare. The child's ideas of numbers are built up by using each number in many situations that involve the learner in the action. The Cuisenaire: mathematics in color program uses the activity approach. The Cuisenaire rods consist of ten different rods, varying in length and color. From these a child may develop almost any known number concept. The program makes it possible for the child to discover mathematical relationships.

B. Objectives (What skills are taught?)

1. Level: Independent exploration
   The pupil can:
   a. ask questions of the rods by arranging them in special ways and then observes their answers in terms of the different ways their arrangements are seen.
   b. make a fort, a bridge , or any design he wishes (independent exploration).
   c. answer questions such as "how many different rod patterns can I make which have the same length."
   d. identify the length and color of rods through tactile observation only.
2. Level: Independent exploration and directed activities without written notation
   The pupil can:
   a. determine equivalence by color and by length.
   b. form a train by putting ends end to end (basic addition facts, but no notation used).
   c. make patterns-trains needed to make incomplete patterns complete (basic subtraction facts, but no notation needed).
   d. demonstrate concepts (shorter, longer, longest, shortest) with the rods.
   e. make a staircase (knows the colors and lengths of rods in sequence: seriation).
   f. identify rods which are complements.
   g. perceive transformations.
   h. discriminate odd and even lengths.

3. Level: Introduction of written signs and symbols (literal work)
   The pupil can:
   a. identify and use signs for addition, for difference and for equivalence.
   b. relate letter symbols to the particular color of each rod.
   c. write number sentences using letter symbols for the colors.
   d. use rods to find solutions for number sentences.
   e. use rods to find equivalences (W-R=G).
   f. make equations using rods and their letter symbols for each color.
   g. discover multiples and numerals (5R-2R=).
   h. use rods to make fraction number sentences.
4. Level: Number values area assigned to rods
   The pupil can:
   a. relate number names to each colored rod.
   b. complete patterns in writing (1+1= ; 3=1+ ; 2-1=).
   c. use the rods to multiply (basic multiplication facts) and record findings with numerals.
   d. demonstrate fraction concepts (1/2, 1/4, 1/3, 1/5) with rods and record using fractional notation.
   e. can complete patterns such as 5-(4/3 x 3) + 2= _____.
   f. can do four operations at once 2/3 x (4-1) - 1/3 x (5-2) +2/5 x (3+2)=_____.
   g. replicate factor, factor, product relationship with the rods.
   h. perform the above operations with numbers up to 20.
   i. make patterns with rods indicating simple division facts
   j. can answer questions such as: 17 ÷ 2=_____, 18 ÷ 15=_____.
   k. can make a clock using twelve yellow rods (a dodecagon).
   l. tell time to the hour, half hour, minute.
   m. demonstrate inverse operations using rods.
   n. use parenthesis to determine order of operations.
   o. use rods to illustrate number properties (commutation, association, distribution, identify, and zero).
   p. use numbers 1 to 100.
   q. do grouping, selling price and profit.
   r. perform vertical and horizontal notation.
   s. read and write numbers 1 to 100.
   t. do long division with two and three digit divisions.
   u. check accuracy of operations by casting out nines.

C. Procedures

The "Cuisenaire Rods" are introduced in the following stages: (1) independent exploration, (2) independent exploration and directed activities with the rods, in which relationships are observed without the use of written mathematical notation, (3) directed activities in which mathematical notation is introduced and used without assigning number values to the rods (opportunities for independent exploration are still needed), (4) directed activities in which the use of mathematical notation is extended and number values are assigned to the rods.

The purpose of qualitative work with the rods is to help pupils make their own discoveries about relationships and to talk freely about what they observe. These discoveries come from actual experiences and not from explanations from teachers. Memorization of rules is avoided. The main effort is directed towards encouraging the children to talk in their own words about what they are doing and what they are observing. Sample activities at each of the four stages are as follows:

1. Creative construction and independent exploration
   a. Concept of equivalence by color and by length
      (1) "In your set of colored rods find all the rods that are the same color."
      (2) "In your set of colored rods find all the ones that have the same length."
   b. Independent exploration and directed activities without written notations
      (1) "Make a train of two blue rods which is equivalent in length to the brown rod."
   c. Introduction of written signs and symbols
      In contrast to the traditional method of teaching, operations and their properties are studied before they are applied to specific numbers. Notations should be introduced as a means of recording and communicating discoveries. For example, the expression "W G P" is a way of saying "If I take a white rod, and then add the length of green, I get a length which is the same as the length of the purple."
   d. Number values are assigned to the rods
      Before discussing the assignment of number values to the rods, we shall discuss the difference between signs and their values; that is, between a written expression and its meaning. When we write the name "Mary" on the board, it is clear that we are not putting Mary on the board, only her name. The same thing applies to numbers and their names. The rods and any symbols we use to represent them can serve as names of numbers. However, the rods themselves (in particular their lengths) have a very important property which ordinary numerals lack: They have the same properties as numbers (lengths and numbers are isomorphic). They can at the same time represent numbers and serve as models of numbers. Thus, the rods can be used in studying arithmetic in much the same way that maps are used in studying geography. When appropriate number values are assigned to each rod, it will be found that whatever is true of any number is also true of the rod or combinations of rods whose lengths represent that number. All of the elementary operations of arithmetic (addition, subtraction, multiplication, and division) have their counterpart in operations with the rods. With the rods it is possible to trace each step in a mathematical activity and to see how each step plays its part. This provides a powerful device for the development of mathematical understanding. Each arrangement of the rods is at the same time a description and a physical model of a mathematical relationship.

D. Experience

When a pupil reaches stage four of the Cuisenaire program and has mastered the four fundamental operations with single digit numbers, he begins individual instruction on specific skills using the Continental Press arithmetic materials. Thus, a pupil has had small group and individually prescribed instruction in arithmetic. While every pupil demonstrated progress in math achievement, the level of achievement has been about average (one month gain for each month in school).

A.A.A.S. "Science, A Process Approach"

A. Overview -- What is it and why was it developed?

A.A.A.S. stands for the American Association for the advancement of Science, the professional organization to which most practicing scientists belong. Thus, A.A.A.S. is the voice of the professional scientist.

These scientists felt a concern that schools needed help in preparing a program of science education which would truly reflect the spirit of science. It was found that there was a real

need for a foundation program to prepare youngsters for the inquiry and discovery type of science education being developed in high schools and colleges today.

It was proposed that science be presented as a process--a way of finding out. The students should be prepared to do science rather than just memorizing facts of science.

The process of science was broken down into fourteen steps or operations. The behavioral skills needed in lack of the processes were listed from simplest to most complex. Lessons were then developed to teach these behavioral skills.

1. Skills Taught
   a. Simple Processes
      (1) Observing
      (2) Classifying
      (3) Using Space-Time Relations
      (4) Using Numbers
      (5) Communicating
      (6) Measuring
      (7) Inferring
      (8) Predicting
   b. Integrated Processes (involving one or more of the simple processes)
      (1) Formulating Hypotheses
      (2) Controlling Variables
      (3) Interpreting Data
      (4) Defining Operationally
      (5) Experimenting
2. The Levels

   A.A.A.S. curriculum is written on levels ranging from kindergarten to sixth grade.
3. Materials Involved
   a. Teacher guide for each level
   b. Each lesson bound separate
   c. Material kit for each level

B. Objectives

1. Part A
   a. Lesson a: Observing 1 - Perception of Color
      (1) The pupils can identify the following colors by sight: yellow, orange, red, purple, blue, and green.
      (2) The pupil can name the three principal colors: yellow, red, and blue.
      (3) The pupil can identify other colors as being like one of the colors: yellow, red, and blue.
   b. Lesson b: Using Space/Time Relationships 1 - Recognizing and using Shapes
      (1) The pupil can identify and name common two-dimensional shapes, such as circles, rectangles, triangles, squares, and ellipses.
      (2) The pupil can identify the common two-dimensional shapes in objects in his environment.
   c. Lesson c: Observing 2 - Observing Color, Shape, Texture, and Size
      (1) The pupil can identify and name two or more characteristics of a single object from the following: color, shape, size, and texture.
      (2) The pupil can describe a single object on the basis of color, shape, texture, and size.
      (3) The pupil can construct a classification of objects on the basis of color, shape, texture, and size.

d. Lesson d: Classifying 1 - Classifying Leaves, Nuts, or Shells
   (1) The pupil can construct and demonstrate the use of a classification of the objects according to variations in a single characteristic which has been specified by someone else.
   (2) The pupil can construct and demonstrate the use of a classification of the objects according to variations in a single characteristic which he has chosen.
   (3) The pupil can describe to others the characteristic he chose for his method of classification.
   (4) The pupil can identify and name words which are used in the construction of a classification system which is based on a single characteristic.

e. Lesson e: Observing 3 - Observing Temperature
   (1) The pupil can distinguish between two very different temperatures without the aid of a thermometer.
   (2) The pupil can identify and name temperature ranges using codes on the thermometer.
   (3) The pupil can distinguish between the temperature in one place and that in another, using a coded thermometer.
   (4) The pupil can distinguish between the temperature at one time of day and that at another, using a coded thermometer.

f. Lesson f: Using Numbers 1 - Sets and Their Members
   (1) The pupil can identify various sets of objectives when given the names or characteristics of their members.
   (2) The pupil can identify a member of a set.
   (3) The pupil can identify a set having only one member.
   (4) The pupil can identify an empty set.

g. Lesson g: Using Space/Time Relationships 2 - Recognizing Direction
   (1) The pupil can demonstrate movements up, down, forward, and back.
   (2) The pupil can identify the direction associated with each of these terms with respect to himself: up, down, forward, and back.
   (3) The pupil can identify the right and left parts of the body.
   (4) The pupil can demonstrate movement in the direction of his right or left.
   (5) The pupil can identify the direction associated with his right and left.

h. Lesson h: Using Space/Time Relationships 3 - Observing Movement
   (1) The pupil can identify objects which are moving or not moving.
   (2) The pupil can name the direction in which the objects or animals are moving--that is, up, down, forward, right or left.
   (3) The pupil can identify body movements other then those of locomotion--moving the eyelid, moving the lower jaw, wrinkling the nose, turning the head to the left and right.

i. Lesson i: Observing 4 - Perception of Sound
   (1) The pupil can distinguish one sound as being louder than or softer than, longer than or shorter than, and higher than or lower than, another sound.
   (2) The pupil can state and demonstrate that a soft sound can be heard better if the source is moved closer to his ear.
   (3) The pupil can identify a sound as being more like one of two dissimilar sounds.
   (4) The pupil can identify objects or events in the environment by the sounds they make, to demonstrate that sounds can carry messages.

j. Lesson j: Observing 5 - Observing Color Changes
   (1) The pupil can identify and name a colored object by comparing it with a different kind of object that has the same color.
   (2) The pupil can name the observed change in color after he has observed such change.

k. Lesson k: Measuring 1 - Beginning Measurement-Comparing Lengths
   (1) The pupil can demonstrate the sorting of objects into sets in which all objects of one set are of equal length.
   (2) The pupil can order objects by length, from the shortest to the longest.
   (3) The pupil can distinguish that one object is the same length as another object by showing that both are the same length as a third.

l. Lesson l: Using Numbers 2 - Order Properties
   (1) The pupil can identify as equivalent two sets which contain the same number of objects, by pairing each object from the first set with a corresponding object from the other set, and with none left over.
   (2) The pupil can identify and name given two sets which are not equivalent, the set which has
      (a) fewer members
      (b) more members
   (3) The pupils can order sets in terms of
      (a) the fewest members
      (b) the most members

m. Lesson m: Using Space/Time Relationships 4 - Spacing Arrangements
   (1) The pupil can construct an arrangement of himself and his classmates, as well as objects, in forms of familiar two-dimensional shapes.
   (2) The pupil can construct the two-dimensional shapes formed by a given arrangement of objects.

n. Lesson n: Observing 6 - Observing Solids Changing to Liquids
   (1) The pupil can identify and name the changes which occur when a solid changes to a liquid, including changes in properties such as height, color, temperature, and shape.
   (2) The pupil can distinguish between solid objects which melt and those which do not melt, under specified conditions.

o. Lesson o: Using Space/Time Relationships--Shapes and Their Components
   (1) The pupil can construct and name the following plane, or two-dimensional shapes: triangle, circle, square, rectangle, and ellipse.
   (2) The pupil can identify the following three-dimensional shapes: sphere, cube, cylinder, pyramid, and cone.
   (3) The pupil can identify and name the two-dimensional shapes that are components of regular three-dimensional shapes.

p. Lesson p: Using Numbers 3 - Numerals and Order
   (1) The pupil can identify the order position of any object or event in a sequence of five objects or events.
   (2) The pupil can identify and name the order position of any object or event in a sequence of five objects or events, using the words, first, second, third, fourth, and fifth.
   (3) The pupil can demonstrate that the third item in a sequence is between the second and the fourth, the second is between the first and the third, and so on.

q. Lesson q: Observing 7 - Perception of Odor
   (1) The pupil can distinguish between objects that have an odor, and those that do not.
   (2) The pupil can identify groups of objects as having similar or different odors.

r. Lesson r: Observing 8 - Perception of Taste
   (1) The pupil can distinguish between certain food tastes as similar to, or different from each other.
   (2) The pupil can identify tastes that are sweet, sour, or salty.

s. Lesson s: Classifying 2 - A Purpose of Classification
   (1) The pupil can construct a classification of a set of objects into two or more groups depending on whether the objects can or cannot be used in a stated way.
   (2) The pupil can construct and demonstrate the use of another classification of the same set of objects into new groups to serve a different stated purpose.

t. Lesson t: Using Numbers 4 - Counting and Numerals
   (1) The pupil can identify and name the number of members of a set up to twelve.
   (2) The pupil can order sets which have from one to twelve members.
   (3) The pupil can identify a written numeral with the appropriate numbers of members of a set, and the converse.

u. Lesson u: Using Space/Time Relationships 6 - Recognizing Time Intervals
   (1) The pupil can distinguish between time intervals by making statements like this: "The period of reading was longer than the period of rest."
   (2) The pupil can identify and name the day of the week and distinguish the appropriate numeral on a calendar for a given day.
   (3) The pupil can identify and name the time on the hour, given a clock and the position of the hour hand, by saying: "It is 9 o'clock."

v. Lesson v: Classifying 3 - Classifying Animals
   (1) The pupil can distinguish one animal from another, using his senses as the only source of information.
   (2) The pupil can identify and name how some common animals are similar and how they are different.
   (3) The pupil can construct and demonstrate the use of a classification of animals, or pictures of animals, on the basis of gross physical or behavioral characteristics.

2. Part B

a. Lesson a: Classifying 4 - Observing Living and Nonliving Things
   (1) The pupil can identify and name at least one characteristic of living objects.
   (2) The pupil can construct and demonstrate the use of a grouping into living and nonliving objects on the basis of observable characteristics.

b. Lesson b: Using Space/Time Relationships 7 - Symmetry
   (1) The pupil can identify objects which have line or plane symmetry.
   (2) The pupil can demonstrate the symmetry of objects by matching their parts.
   (3) The pupil can demonstrate that some objects can be folded or cut in more than one way to produce matching halves.

c. Lesson c: Using Space/Time Relationships 8 - The Shapes of Animals
   (1) The pupil can describe common environmental objects such as animals in terms of two - and three - dimensional shapes.
   (2) The pupil can identify and demonstrate bilateral symmetry in animals.

d. Lesson d: Measuring 2 - Linear Measurement
   (1) The pupil can demonstrate how many times a measuring stick can be laid end-to-end along a given length that is to be measured.
   (2) The pupil can construct the explanation that when lengths are used to measure a given object, the results will be numerically different when measuring sticks of different lengths are used to measure a given object.
   (3) The pupil can name the results of measurements that are not an exact number of stick-lengths. For example, if the object to be measured is between four and five measuring sticks, the following expressions are acceptable: "The object is more than four sticks"; "Four sticks and a little more"; "Between four and five sticks"; or other similar answers.

e. Lesson e: Observing 9 - Observation, Using Several of the Senses
   (1) The pupil can identify objects, or changes in objects, by using several of the senses.
   (2) The pupil can identify which sense or senses he used to make his observations, by saying, for example, "I smelled it," "I saw it," and so on.

f. Lesson f: Using Numbers 5 - Numbers and the Number Line
   (1) The pupil can identify and name the numerals 0, 1, -1, 2, -2, 3, -3, 4, -4, 5, -5, 6, -6, 7, -7, 8, -8, 9, and -9.
   (2) The pupil can distinguish between any two positions on the number line and name positions by using the number names.

g. Lesson g: Observing 10 - Observing the Weather
   (1) The pupil can construct and demonstrate the use of a record of weather conditions on a chart, using standard symbols, and name these recorded symbols.
   (2) The pupil can distinguish between the weather conditions on two days by examining the weather chart.
   (3) The pupil can distinguish weather conditions from day to day in comparative terms such as "hotter or warmer than", "cooler than", "windier than", or "cloudier than", using the data recorder on the weather chart.
   (4) The pupil can name the temperature in degrees, using a simple thermometer.

h. Lesson h: Communicating 1 - Identifying an Object
   (1) The pupil can distinguish between collections of information that are sufficient to identify an object and those that are not.
   (2) The pupil can describe a sufficient number of properties of an object so that a second person can identify the object.

i. Lesson i: Classifying 5 - Variation in Objects of the Same Kind
   (1) The pupil can identify and name variations among objects or organisms which have many features in common.
   (2) The pupil can describe features which are common for each member of a group.

j. Lesson j: Measuring 3 - Comparing Volumes
   (1) The pupil can order containers by volume when relative volumes can be distinguished by inspection.
   (2) The pupil can order containers by volume, when ordering is not obvious by inspection, by pouring liquid or a finely divided solid (such as sand) from one container to another.

(3) The pupil can demonstrate a procedure for comparing the volume of containers in terms of unit volumes required to fill each container.

k. Lesson k: Using Numbers 6 - Numbers 0 Through 99

(1) The pupil can describe the numeral for ten as a one on the left and a zero on the right; the one indicates one set of ten objects, and the zero means there are no more objects. He should be able to give a similar description of 20, 30, and so on, up through 90.

(2) The pupil can identify and name numbers in the sequence 11 through 99 a successor of 10, 20, 30, and so on. For example, he should state that the symbol 13 represents the sum of 10 and 3.

(3) The pupil can name the predecessor and successor of each number in a sequence. For example, 28 is one less than 29, and 32 is one more than 31. He should be able to give a similar description for any number between 0 and 100.

l. Lesson l: Measuring 4 - Linear Measurement Using Metric Units

(1) The pupil can name three metric units of linear measure--the centimeter, the decimeter, and the meter.

(2) The pupil can demonstrate how to select the appropriate metric measuring stick when asked to determine the length of an object.

(3) The pupil can demonstrate the procedure for finding the length of an object, and name the results in whole metric units or as between two whole number units.

(4) The pupil can demonstrate the approximate length of a centimeter, a decimeter, and meter.

m. Lesson m: Observing 11 - Observing Some Properties of Magnets

(1) The pupil can identify a metal object of any shape or size as a possible magnet.

(2) The pupil can identify objects which are magnets by demonstrating their effect upon various metals.

n. Lesson n: Measuring 5 - Making Comparisons Using a Balance

(1) The pupil can order objects the weight of which differ appreciably, by lifting them and by comparing them on an equal-arm balance.

(2) The pupil can state the rule that one object is heavier than another because the earth-pull on that object is greater than it is on the other.

(3) The pupil can demonstrate how to compare the weight of small objects by counting the number of arbitrary units, such as paper clips, pins, or tacks, needed to balance the objects on an equal-arm balance.

(4) The pupil can describe the results of his measurements, as in the following example: "The object weighs the same as six paper clips", or "The object weighs more than ten paper clips but less than eleven paper clips."

o. Lesson o: Observing 12 - Observing Color and Color Changes in Plants

(1) The pupil can describe changes in the color of an object when the change occurs within a short time (a few minutes or less).

(2) The pupil can identify the observed change in color as being caused by the addition of another substance.

p. Lesson p: Communicating 2 - Introduction to Graphing

(1) The pupil can construct a bar graph.

(2) The pupil can identify and name the number of items represented by the bars of such a graph.

(3) The pupil can identify the number of items represented by different bars and distinguish among such expressions as more than, fewer than, the same number as, most, and fewest.

q. Lesson q: Using Space/Time Relationships 9 - Shadows
   (1) The pupil can identify a three-dimensional object from its two-dimensional projections.
   (2) The pupil can identify the two-dimensional projections of a given three-dimensional object.

r. Lesson r: Using Numbers 7 - Addition of Positive Numbers
   (1) The pupil can construct a new set of objects by putting two sets of objects together and name the number of members in the new set orally or in writing.
   (2) The pupil can identify and name these written symbols:
      (a) = as is or equals, and conversely
      (b) + as plus, and conversely
   (3) The pupil can name orally the written statement 2+3=5 as "Two plus three is five," "The sum of two and three is five," "Two plus three equals five," or "The sum of two and three equals five." And reversing the process, construct the statement when it is given orally or demonstrated with objects.
   (4) The pupil can construct and name the sum of any pair of numbers from 0 to 99, the sum of which does not exceed 99, and identify and name the missing number in a statement like 4+ =7 which has a sum of 9 or less.

s. Lesson s: Using Space/Time Relationships 10 - Recognizing and Using Angles, Directions, and Distance
   (1) The pupil can identify and name angles.
   (2) The pupil can distinguish a right angle from other angles.
   (3) The pupil can identify a "square corner" as an example of a right angle.
   (4) The pupil can state and demonstrate which of two angles is larger by super-imposing one angle upon another.
   (5) The pupil can demonstrate how to walk or mark off a designated number of "steps in a specified direction."

t Lesson t: Using Space/Time Relationships 11 - Time Intervals
   (1) The pupil can distinguish short time intervals involving minutes or seconds by counting, or by using a time-measuring device such as a metronome, pendulum, water clock, or sand glass timer.
   (2) The pupil can distinguish between observed differences in time intervals.

u. Lesson u: Measuring 6 - Ordering Plane Figures by Area
   (1) The pupil can order groups of plane figures of various shapes and sizes from smallest to largest on the basis of area. He will do this by visual comparison, by superimposing one upon the other, and by comparison with some selected unit.
   (2) The pupil can demonstrate a procedure for finding the area of plane figures in terms of some selected unit.

v. Lesson v: Observing 13 - Observing Mold Gardens
   (1) The pupil can describe the color, shape, and size of a few kinds of molds.

(2) The pupil can identify from a group those materials that can support the growth of molds and those that cannot.

w. Lesson w: Communicating 3 - Describing Physical Changes
(1) The pupil can describe the physical changes in an object in terms of such characteristics as color, shape, texture, sound, volume, length, and surface area.
(2) The pupil can describe any characteristic which remains unchanged while the object itself is changing.

x. Lesson x: Communicating 4 - Observing Collisions
(1) The pupil can describe the heavier object as the one which exerts the greater force when two objects move at the same speed.
(2) The pupil can describe the lighter object as the one which will move farther, given two objects of different weights and the same force exerted on each.
(3) The pupil can demonstrate a procedure for measuring and recording changes in the position of various objects.

y. Lesson y: Communicating 5 - Describing Changes in Plants
(1) The pupil can identify and name observed changes in a plant.
(2) The pupil can describe the order in which the observed changes occurred.
(3) The pupil can describe what was done to produce the observed changes.
(4) The pupil can describe the direction of motion and the rate of change of the motion of the parts of the plant which responded to the stimulus.

z. Lesson z: Measuring 7 - Seeds and Seed Germination
(1) The pupil can demonstrate a procedure for determining the increase in the size of seeds after they have been soaked in water.
(2) The pupil can demonstrate that the amount of water available to the seed determines whether or not a seed sprouts, and how quickly
(3) The pupil can construct a table for observations made of seed growth.

C. Instruction
1. Title
a. The process title gives the process to be emphasized.
b. The subject title indicates the content or setting which is used to teach the process.
2. Objectives
a. The objectives for each lesson are listed.
b. They are statements of what the child is expected to be able to do as a result of the exercise.
3. Sequence Chart
a. The Sequence Chart defines a hierarchy of skills for each process.
4. Teacher Information
a. Rationale
(1) It provides useful background information.
(2) It provides a brief statement of where and how the exercise fits into the process sequence.
b. Vocabulary List
(1) It provides a list of new words or special phrases which are introduced in that lesson.

(2) The students should be able to respond to or use these words by the end of the exercise.

c. List of Materials Needed

(1) The lists also indicate whether or not the materials are provided in special kits of materials for each level.

5. Introduction to Exercise
   a. This section provides suggestions of ways to introduce the problem and arouse interest in the activities.
6. Instructional Activities
   a. Each activity describes how the teacher and student are to be involved.
   b. They are arranged in sequence.
   c. Often optional or alternative activities are included, to be used as the teacher sees fit.
7. Generalizing Experience
   a. This experience relates the newly acquired knowledge and behaviors to a new situation in a different context.
   b. It tests the ability to transfer the process learning.
8. Appraisal Activity
   a. This activity provides a way to assess whether or not the objectives for that lesson have been achieved.
9. Competency Measures
   a. This is a series of tasks to be performed by a student and observed by the instructor.
   b. It is a means of determining whether the objectives have been achieved by the individual student.
   c. A check sheet is provided so that the teacher may have a record of each student's progress.

Our Working World

Lesson 1: Getting to Know the Family

Overview:

This unit seeks to show the child what the complete family consists of, how families differ in various ways, what the names of the various family members are, and family life as a process that changes from time to time due to certain circumstances.

Objectives:

1. To help children discover that the family fulfills important economic, social, and political needs; that home is where we grow up.
   a. The adults of the family, who make the home, provide us with food, clothing, and shelter.
   b. As a member of the family we learn how to grow up.
      (1) We learn how to work and play.
      (2) We learn how to live with other people and respect them.
      (3) We learn how to help and share.
      (4) We learn why rules are necessary, and we learn to obey them.
      (5) We learn how to be honest.
      (6) We learn what love is.
      (7) We learn that various members of the family have various titles such as Father, Mother, sister, brother, etc.

2. To help children look on the family and family life as a process of perpetual change.
   a. Families grow older; small families grow larger; large families regroup into small, young families.
   b. Many families move from farm to city, from place to place within the city, from one city to another, and from one country to another.
   c. Families' wants and range of choice change, depending on family size, age, education, occupation, income, tastes, and the level of technology of society.

Duration of Unit: Two weeks

Learning Activities:

Display various books such as:

A Day with Daddy by Alvin Tresselt
Moving Day by Helen T. Hilles
A House for Everyone by Betty Miles
The Growing Story by Ruth Krauss and other similar books to introduce the unit.

1. Begin by using flannel board pictures representing various family members such as: Mother, Father, sister, brother, aunt, uncle, etc. Also put their family name under each. Discuss them each and their place with the family.
2. To reinforce the meaning of "Home is where we grow up," the pupils can discuss why home is important for a baby. Read "The New Baby" by Ruth and Harold Shane. After the story, discussions about brothers and sisters can begin. Also about how safe a home is. Discuss how a family helps the baby.
3. During art time the children can draw pictures of the various members and make a booklet entitled "My Family".
4. Show a filmstrip entitled "houses." Discuss the various types of houses there are. Read the poem "Houses" by Elsa Jane Werner. See if the children can remember all the different types of houses.
5. The children might draw pictures of the houses they live in. Then they might make up a display entitled "We Live in These Houses" and discuss the kinds of houses in which people live. Do this during art time.
6. After discussing houses have the children work 1A "My House", and 1B "My House Keeps Me Safe." Evaluate each child's work on pages.
7. Ask: "What do we learn at home that teaches us how to grow up?" After random answers have children turn to 172-73 in textbook. The pictures are arranged in sequence to represent working, playing, helping, sharing, making rules, obeying rules, respecting others, and being honest. Dramatizations of each of these pictures can reinforce the ideas in the children.
8. The children may want to make rules for their "family" at school to follow.
9. To reinforce the idea that technology changes a family wants, read the story "The Little House" by Virginia Lee Burton. Discuss the various changes of the house, community, family, etc.
10. Work page 1C "The Things That We Want to Change All The Time" in the activity book.

Evaluation:

Play portions of the recorded lesson. Before the main ideas are discussed, see if the children can tell the answers before they hear it on the record. The main ideas covered are:

1. Who are my family?
2. How do families differ?
3. Why do we live in families?
4. What do we have to learn to grow up?
5. How do families change?

If the students can answer these along with the record, you have a good evaluation.

Lesson 2: Families Are Alike

Overview:

This unit provides the basic understandings of how families are alike and that everyone is a producer in some ways and a consumer always.

Objectives:

1. To help pupils discover that every family--in fact everyone consumes or uses food, clothing, and shelter, and that, therefore, they are all consumers.
2. To help pupils discover that some things are used up or consumed at once, whereas other things may be used or consumed again and again.
3. To help pupils discover that before anything can be consumed, it must first be produced.
4. To show that people who make useful things or do useful work are producers.

Duration of Unit: One week

Learning Activities:

1. Listen to recorded lesson. Ask
   a. What are the things that your family can and cannot get along without? Help the children discover the three essentials: food, shelter, and clothing.
   b. What are some of the kinds of things that your family consumes? What do we call people who use things? Consumers are all members of the family consumers.
   c. What must first be done to the things we consume? (They have first to be produced.)
   d. Which things does your family use up at once? Which things does it use again and again? All these questions should be discussed during appropriate times during the record.
2. Have children work page 2A "What Families Cannot Live Without." Check to see if children have learned the three essentials.
3. Read Story "Anatole: The Business Mouse." This is an excellent example of difference between producers and consumers. Also, find two good pictures; one - consumer; one - producer. Put the pictures up on the board with the appropriate work under each.
4. In order to help children differentiate between producers and consumers, the following game can be played: The teacher describes someone who is either a producer or a consumer. Pupils clap if the person is a producer or rap on their desks if he is a consumer. They explain their choice.
5. A complete discussion of consumers should be held at this period. Children should completely understand the word consumer and then clip pictures from magazines in which people are shown consuming. Place these under a display entitled "What is a Consumer?"

6. Work page 2B "People Who Use Up Things Are Consumers."
7. Discuss the meaning of producers. Complete this and let the children clip pictures of producers from magazines. Put in a display entitled "What is a Producer?"
8. Work page 2C in activity book "People Who Do Useful Work Are Producers."
9. The teacher can bring a glass of water to class and drink it before the class. From the demonstration, the children may discover that some items (like the glass) can be used again and again: whereas, others like the water are consumed only once. Extend this with bread, clothing, toothpaste, etc.

Evaluation:

Show two pictures, one of a consumer and one of a producer. Ask which is consumer and which is producer for an evaluation. Also ask what three essentials are needed for life.

Lesson 3: Families Are Different

Overview:

This unit seeks to introduce the children to families in different parts of the world, the common needs of the people, and the unusual things about the families that make them different.

Objectives:

1. To help pupils discover that families in different parts of the world, in spite of their common need for food, clothing, and shelter, are different because of:
   a. What they have, or their immediate physical environment.
   b. What they do with what they have, or the extent to which they are able and willing to control their environs and thus provide for their needs.
   c. The amount of knowledge or skill they may have acquired through:
      (1) The development of new ideas.
      (2) The exchange of goods and ideas with other people.
   d. The extent to which members of families and whole families help one another.

Duration of Unit: One week

Learning Activities:

Display many books such as:

The True Book of Houses: Katherine Carter
Little Indian Pottery Maker
Pueblo Indian Stoves: Arthur Gates
Homes Around the World: Kathryn Jackson

Let the children have a chance to look through the books and discuss the pictures.

1. Take time to do a Bulletin Board with the children. Put pictures of different people from the world and label. Talk about each. Label this display "People Around the World."
2. Play recorded lesson. Ask pertinent questions about Nakenak's family and their way of living. This discussion talks about Eskimos. Discuss fully.
3. Read stories "Why Caribou Eskimo Families Live As They Do," "Why Pueblo Families Live As They Do," "Why Bushmen Live As They Do." The children can follow the stories by examining sequences on pages 177-82 of the text. The Eskimo, Bushman,

Pueblo have been chosen because of the natural environments. After each story the following questions should be asked:

a. How do weather and landscape influence the people?
b. How does the family get food?
c. What tools and weapons do they use?
d. What do they make their clothing out of? Houses?
e. What do they trade?
f. What do they do to have fun?
g. How do members of the family help one another?

4. During art time have children draw a picture of Eskimo, Pueblo, or Bushman. Make a display of the pictures. Encourage the children to be creative and colorful.
5. Show filmstrip on how families are different. Discuss the wide variety of houses in other parts of the world.
6. Work pages 3A and 3B in activity book, "Families are Different."
7. Emphasis at latter part of week - What weapons are used by the Bushman, Eskimo, and Pueblo. Let children discuss the weapons such as:
   Spear - (Eskimo - Bushman)
   Knife - (All 3)
   Bow and Arrow - (All 3)
   Harpoon - (Eskimo)
8. Have children bring sticks and string. Make weapons during art time and make a display and label each. Let children play a game of telling which people use the weapons.

Evaluation:

Let children work page 3C in activity book to evaluate the week's work. The page is entitled "Where is it Easiest to Work." Also more discussion about the work will aid the evaluation.

Lesson 4: How Do Families Produce

Overview:

This unit seeks to reinforce what Unit 2 tells about producers. It will give the child a better understanding of how useful work is producing.

Objectives:

1. To review the understanding that a person who does useful work is a producer.
2. To show that there are two kinds of producers.
   a. People who make useful things are producers of goods.
   b. People who do useful work for others are producers of services.
3. To help pupils discover that not all members of the family are producers. Some may be too young or too old, some may be sick or disabled.
4. To help pupils discover that producers have to help those who only consume.
5. To help pupils see that people feel good when they do useful work.
6. To help pupils see that useful work is appreciated.

Duration of Unit: One week

Learning Activities:

1. Review the words producer and consumer. Stress the difference. Help every child understand. Show various pictures of producers and consumers.
2. Display a board of pictures of goods. Talk to children about what a good is (a useful thing). It is very important that they understand what a good is.
3. Put pictures of producers of goods and services into two piles. Drawing from the producer of goods pile, the teacher should hold up one picture after another asking: "What is this person producing? Is this person producing a useful thing? Why is it a useful thing? What do we call a person who is producing a good?" Pick out of pile of producers of services. Hold up pictures and ask: "What is this person doing? Is this person a producer of services? Why is it useful work?"
4. Work page 4A "Goods and Services" in activity book.
5. Read the story "The Brown Family" to reinforce the objective that all members of the family are consumers but not all producers.
6. To help children see that producers help those who cannot produce, have children follow story on page 103 of the text. Let children work page 4B "Some people cannot produce."

Evaluation:

Have children listen to recorded lesson. Take needle off before the answers are given on it. Let the children answer. Do an experience chart using the words: goods, services, producers, and consumers. Let children make the sentences.

Lesson 5: Dividing the Work

Overview:

This unit helps the pupil to understand that everyone does not do all jobs, but each person has a certain job. This is the division of labor.

Objectives:

1. To help pupils understand the division of labor; that is, that everyone cannot do all jobs, but that each person undertakes a certain job. In this way people develop proficiency:
   a. At home
   b. At school
   c. In the neighborhood
   d. In the world
2. To help pupils discover that division of labor helps get the job done faster and better.
3. To help pupils discover that division of labor makes people interdependent because when a person specializes, he depends on other people for the other goods and services he needs.

Duration of Unit: One week

Learning Activities:

1. Play recorded lesson, stopping it at intervals in order to discuss various words. Talk about the story "Pelle's New Suit" and the various ways to divide labor.

2. To illustrate the efficiency of the division of labor, the children can fill boxes with various articles. A good example would be fixing Junior Red Cross packages. Two groups of children with equal skills are selected. In the next group, each child puts all the different kinds of items in a box, closes it, and stacks it neatly. In the second group, the labor is divided and boxes pass along an assembly line with each child placing only one kind of item in the box. The last child closes the box and stacks it. The class will see the result. The team that divides the labor will out-produce the other.
3. Read the story "Gone is Gone" to the class. The story describes what happens when labor is divided in the wrong way. During art time the children will enjoy illustrating the story in their own way.
4. Have children work 5A."How Did This Family Divide the Labor?" Give very explicit directions from the activity book.
5. The class can prepare a helper's chart showing division of classroom chores for the children each week. This project should be done for the rest of the year.
6. To show that we depend on other people let children work 5B "Whom Does Our Family Depend On?"

Evaluation:
Draw up a sheet similar to the activity page 5A on the division of labor. See if each child can tell how labor is divided. Also replay portions of recorded lesson. See if the children can successfully answer the questions.

Lesson 6: Tools and Machines

Overview:

This unit is designed to help the pupil understand how tools and machines help us produce faster and better.

Objectives:

1. To help pupils discover that tools help us produce faster and better.
2. To show that there are simple tools and complicated tools and that they are both very important.
3. To show that man is unique because he invents tools and machines and improves them.
4. To show that people have to learn how to use tools and machines.
5. To help pupils understand that tools and machines must be properly maintained.

Duration of Unit: Two weeks

Learning Activities:

Display books:

a. Tim and the Tool Chest - Jerrold Bein
b. What is a Simple Machine - Gene Darby
c. Machines at Work - Mary Elting
d. Tools for Andy - James Tippet

1. Discuss with the children the various tools they have in their homes and how they are used. Let children act out the awkwardness of working without tools and machines. For instance: picking up leaves with hands; raking leaves; picking up dirt with hands; using a broom; driving a nail with hand; driving a nail with hammer; breaking grass with hands; mowing lawn; etc.

2. Play recorded lesson and let children follow in book. After lesson ask questions:
   a. What are some of the tools that we have in our homes?
   b. Why are tools important?
   c. What tool did Granny use in the story?
   d. Why was Granny's needle important?
   e. What tool do we have that would help Granny to work faster? (Sewing Machine)
   f. Could a person use a sewing machine if its needle was lost? (No, a sewing machine is made up of simple machines.)
   g. Why is it important to learn how to use tools?
   h. Why should people take care of tools?
   i. Also talk about how men differ from animals in that they can invent and use machines.
3. As an introduction to science, the teacher can bring some simple tools for a display of the 6 simple tools; screw, lever, wheel, pulley, inclined plane, and wedge. The children can investigate other tools and see the simple tools make up many complicated tools.
4. Read the story "The Little Red Wagon" by Jeanne Stover. This story describes how much easier and faster it is to do a job with the help of machines. It also emphasizes the importance of taking care of tools. Discuss tools that help us work faster and better.
5. Work page 6A "Tools Help Us Produce Faster and Better." The pupils should be able to select the tool that would make the job easier and understand just how it does.
6. Show filmstrip "Simple Machines" and discuss. See how many the children can learn and identify by sight..
7. To show the transition from simple tools to complicated have children look at page 186 of the text, which shows the history of the hammer, starting with the use of the stone and ending with the development of the electric hammer. Children can describe how the tool has been improved at each stage of development and how the improvements have helped us to do work faster and better.
8. Have children work page 6B "Better Tools Help Us Produce Faster and Better." The children should see the relation between the hand tools and the machines and know in what way the machine is an improvement of the hand tool.
9. Take a field trip to the flag pole. Let the children observe the pulley and wheels. See if they can remember the simple machines.
10. After the field trip read the story "Robbie Finds a Friend" to the class. The story describes a young child when he is confronted with the task of running the flag up a flagpole.
11. During art time let the children draw pictures of a tool or machine that they would like to invent. Let them tell a story about it. Prepare a display of the inventions.
12. To evaluate, let children work page 6C in the activity book.

Lesson 7 and 8:	Families Sometimes Work in Their Free Time
(Combined due to their shortness)	Families Sometimes Play in Their Free Time

Overview:

This unit is designed to help children realize that families can work and play during their free time. It is also designed to help the child understand the basic division of labor in order to produce more. People have more free time because of the division of labor.

Objectives:

1. To help pupils discover that time is saved through the division of labor and the use of tools.
2. To show that families sometimes save money by producing services for themselves.
3. To help pupils discover that by producing goods and services for themselves at home, members of the family give up free time for leisure.
4. To help children realize that whether members of the family use their free time for work of for leisure is entirely up to the person.
5. To help pupils discover that people have more time on hand because of the division of labor.
6. To help pupils discover that people can choose to use their free time:
   a. To do more work
   b. To play or pursue a hobby
7. To show that hobbies may develop into occupations.

Duration of Unit: One week

Learning Activities:

1. Begin unit by talking about the things a person can do in their free time. They can either work or play.
2. Play recorded lesson about Father's chores on Saturday. This will reinforce working during free time. Ask questions about the children's fathers and how they work during their free time. During art time let the children draw pictures of their fathers doing useful work during their free time. Put up a display under the title "Our Fathers Do Useful Work in Their Free Time."
3. Read story "Daddy Can Fix It" to the class. After reading the story, the teacher can discuss how the Daddy used his free time. Let the children work page 7A "Some Families Work in Their Free Time." The pupils should be able to distinguish between work and leisure activities.
4. The teacher can have the class look at page 188 of the text. The three scenes pictured can be used as the basis for discussion of how father would best save money: by repairing the chair; by paying a repairman; or buying a chair. Discuss such things as: would father need special training to repair the chair? Would he need special tools? is the chair as good as a new chair would be?
5. Have children work 7B "When Does Father Save Money?" The activity reinforces the idea that one saves money by doing useful work in the home.
6. The children can find out about the hobbies of relatives and friends. A discussion about what people do in their free time will help the children understand. During art time have the children draw pictures of things people do in their free time.
7. To provide the pupils with an example of how childhood free time hobbies often develop into a career, read the story "A Boy Who Always Asked Why" to the class. It tells about Thomas A. Edison. After it, discuss various careers the children might have.
8. Work page 8B "Sometimes Our Hobbies Become Our Job" from the activity book.

Evaluation:

Discuss more about free time work and leisure. From this you can readily observe the children's understanding. Have them work 8A "Some Families Play in Their Free Time."

Lesson 9 and 10 — Wishes, Wishes, Wishes
(Also Combined due to shortness) — How Choices Are Made

Overview:

This unit helps the child realize that peoples' wants are unlimited and they are constantly wanting; but, since they cannot have everything they must make choices.

Objectives:

1. To help pupils discover that people's wants are unlimited.
2. To help pupils discover that it is not possible to produce enough goods and services to fulfill everyone's wishes.
3. To help pupils discover that since we cannot have everything we want, we have to make choices.
4. To help pupils discover that individuals and families choose the things that seem most important to them.
5. To help pupils understand that after one thing is acquired something else is always wanted.

Duration of Unit: One Week

Learning Activities:

1. Play recorded lesson of "The Fisherman and His Wife." (People always want more and more) Discuss the story and the conclusion.
2. Let every child draw (during art time) a picture of all the things that he wants. Display under "I Wish, I Wish, I Wish." Let their discussion continue until the children are aware of the vast variety of wishes.
3. Help children make an experience chart on what would happen if everyone got all of their wishes. Include discussion about how many factories would be needed, etc.
4. The teacher can read the story "A Week of Sundays." The story shows that if production is not maintained, difficulties will occur since people consume everyday. The story also shows that play is more enjoyable when we have our work done. Also have children work page 9A "What Do You Wish For?" in the activity book.
5. The teacher can read the poem "Choosing" to the class. The poem nicely illustrates the difficulty of making choices. Discuss what things should be bought first by families. The children should understand that choices should be made on the basis of what is needed. Work page 10A "What Do Families Buy First" in the activity book.
6. During art time the children can paint pictures of three things they want and have them indicate the order of importance. For instance, a cold drink, candy bar, comic book.
7. Read the story "Two Pesos for Catalina." This story beautifully illustrates how to make good choices. It tells about two choices of two different people and what happened.
8. Have children work 10C "What Things Would This Boy Choose?" The children should see that special circumstances affect choices by the fact that the boy is hot, tired, hungry.

Evaluation:

To evaluate the children's understanding have them work 10B, "We Make Choices" in the activity book. This activity is designed to help the children see that choices are limited by the resources available. Also, it will aid your evaluation.

Lesson 11: Long, Long Ago

Overview:

This unit is designed to help children better understand the hard life of a pioneer family. Due to lack of tools and machines, pioneers had to produce many goods and services at home.

Objectives:

1. To help the pupils discover the economic characteristics of the pioneer home.
   a. Most pioneer homes were farms.
   b. Most goods and services were produced in the home.
   c. Owing to a lack of specialization and a lack of tools and machines, the work was hard and almost all of the family's time was used to produce food, clothing, and shelter for consumption by the family.
   d. Even recreation was work-oriented, so that what little free time was available was rarely wasted.
   e. The choice of occupation was limited primarily to farming.
   f. The choice of consumer goods was limited because it took so long to produce goods.
   g. What the family produced and what it consumed were both influenced by the seasons.
2. To contrast standard of living of pioneer family with that of the modern American family.

Duration of Unit: Two weeks

Learning Activities:

1. Display various books for the children to acquaint themselves with pioneer life.
   Pioneer Children of America by Caroline Emerson
   The True Book of Pioneers by Mabel Harmer
   The Peddler's Clock by Mable L. Hunt
   Little House in the Big Woods by Laura I. Wilder
   Don Frontier and the New House by William Harley
2. Show a filmstrip entitled "Pioneer Life." This will help children understand the concept of "pioneer" and their life. Discuss fully.
3. Discuss the hard life of the pioneer family. Explain how they had to make everything they needed. Contrast it with today's conveniences.
4. Play the recorded lesson for the children. This will tell about pioneer life and what had to be done by the family. Also it will tell a pioneer story about a little girl. Discussion questions should follow. They are found in the teacher's manual pages 74-75.
5. During art time, have the children draw pictures about pioneer life. Let each child discuss his picture.
6. To help the children understand the lack of specialization and lack of tools, the teacher can have the children look at pages 195-198 of the text. The four sequences show how food, clothing, and shelter were produced, how free time was spent, and things done in a day. A discussion should follow about each sequence.

7. To get some sense of the lighter moods of the pioneers, the class might enjoy learning the following songs: "Froggie Went a Courtin", "Turkey in the Straw", and "Pop Goes the Weasel".
8. Read the story "Jeremy's Big Day". The story emphasizes the relative self-sufficiency of pioneer households. The lack of tools and machines compelled all members of the family to produce goods. Work was so necessary that even recreation was organized around useful work.
9. To help the children obtain some idea of pioneer tools, the class might visit a museum, if possible.
10. Discuss the hardships and differences of the season. Help them to see the circumstances of each season. Work 11A of the activity book "Pioneer Life was Tied to the Seasons".
11. Play the game "Gossip" to help the children understand how pioneers communicated in the scattered farms. Peddlers came through and spread news. The children sit in a circle. The first child whispers a sentence to the next child. The news is relayed to each child through a whisper. The last child tells what he heard. Compare it to what the first child said.
12. Go to activity book 11B "How People and News Traveled Then and Today?" Discuss.

Lesson 12: As We Grow Up

Overview:

To help the children to understand that rules and customs must be followed because the world tries to be an orderly place. There needs to be an understanding that rules and customs change due to various reasons.

Objectives:

1. To help pupils discover that there is orderliness in the world around us (order in society) because most people, in their daily actions, behave according to predictable patterns.
2. To help pupils discover that the main reason for the predictability of human behavior is the fact that people follow customs and rules.
3. To help pupils discover that when men follow rules and customs, they are rewarded, and when they do not, they are punished.
4. To help the child discover rules and customs. The development of science and technology and the demands of various groups in society put pressure on the social society.
5. To help children understand that rewards may take form of respect, greater financial rewards, gaining friends, and that punishment may take the form of lost respect, lower financial rewards, jail sentences, etc.
6. To show that many people, led by an inner drive, do their best without considering material rewards.

Learning Activities:

1. Play the recorded lesson. This is a story about a little girl who has a dream. Everything that happens in the dream is different than what happens in normal life. Because people didn't do what Mary Jane expected them to do, she felt that the world was disorderly. Questions for discussion are found in manual.

2. To help children understand the importance of such common customs as good table manners, they can set a table and mimic good and bad table manners. Afterward the class can discuss how unpleasant it would be if everyone had bad manners. The class might also discuss the fact that eating three times a day is also a custom.
3. Discuss other customs such as: being on time, doing your job, mother's particular jobs, father's particular jobs.
4. Read "Timmy on Time" to the class. After the story the class should discuss the advantage of being on time.
5. During art class, let children make a clock face and practice telling time.
6. To help children understand the importance of rules in their own lives, they can identify and discuss some of the rules they encounter every day: stopping at red lights, crossing at corners, not throwing trash in the street, respecting the property of others. If some of the children ride bicycles, they can note some of the rules they have to follow: signaling at turns, riding on the proper side of the street, not parking where you should not, etc.
7. Read "A Picnic in the Park." The story tells of a family picnic and how important it is to pick up the trash so the park will be clean for the next family. Discuss.
8. Let children work activity page 12A "What Will Happen Next." Children should match the situation with the action that would most probably follow.
9. To demonstrate how disorderly the world would be if we could not depend on other people, the teacher can have the children read the story "The Plumber Who Did Not Come" on page 200 of the text. Discuss using questions from the manual.
10. Work page 12B "Who is Following the Custom?". The children should be able to distinguish customarily acceptable behavior from behavior that breaks rules or departs from custom.
11. Help the children write an experience chart using all the new words such as customs, rules, order, grow, etc. Let the children draw pictures to place on the chart as illustrations. Help each child to read it successfully.

Evaluation:

Let children finish unit by working page 12C "Who Will Do the Punishing?". The children should be able to match each act with the people who will punish the wrong. Replay portions of the recorded lesson. Let the children answer the questions.

Lesson 13: Specialists At Work

Overview:

This unit teaches that people work away from home doing a special job.

Objectives:

1. To help children discover that when fathers and mothers work away from home, they have a special job to do.
   a. Because they have a special job to do, they learn how to do the job well.
   b. Because each person has a special job to do, he must depend on other people to do other jobs.
2. To show that people work away from home because:
   a. Many goods and services have to be produced by many different kinds of specialists working together.

b. Big machines have to be used in large buildings called factories.
c. Many goods and services are produced faster and better where the soil or climate is right.

3. To show that today people have a wider choice of goods and services and jobs than people long ago.

Duration of Unit: Two weeks

Learning Activities:

1. Play the recorded lesson. This record will also review many things already learned. Discussion should follow. Questions are found in the teacher's manual page 90.
2. The children can ask their parents what they do at work and then report to the class or, if possible, act out what the jobs are. Play a game of Charades: members of the class act out certain occupations, and the rest of the class tries to guess what the occupation is.
3. Read the story "The Cat Who Wondered" to the class. Afterward the class might discuss the various jobs of people who travel to work and why their work is useful.
4. During art class the children can paint pictures of an occupation. Let the children tell about their occupation in front of the class. Put the pictures in a display entitled "Occupations".
5. To help the children understand the importance of specialization, the class might discuss how important in the community are such specialists as doctors, firemen, policemen, teachers, farmers, grocers, and pharmacists. Each is important to the others and each in turn needs all the others.
6. To reinforce the idea that there are many different jobs for people to do, read the forms "Fathers at Work" and "Round and Round Go the Wheels".
7. To help children understand what producers do, have the children work page 13A "What Do Producers Do?".
8. The children can cut from magazines pictures showing producers at work away from home. They might prepare an exhibition of the pictures, grouping them under the titles "Producers of Goods" and Producers of Services".
9. Work page 13B "Old and New Jobs?" in the activity book. Discuss the jobs of the past and how they have changed.
10. Read the story "The Red Rooster" to the class. After the story has been read, the class can discuss the fact that just as inventions have displaced the animals in the story, so do new machines cause men to look for new kinds of jobs. Talk about how formal education helps people to adapt more easily to changing conditions.
11. Work page 13C "Old and New Tools". The children should be able to associate the tools of the past with the pioneer, and modern tools with the man of the past. After completing the activity, the class should discuss how new tools help us to work faster and better, and how new kinds of jobs have appeared as a result of such inventions.

Evaluation:

Play portions of the recorded lesson to see if the children can answer the questions. Discuss any portion they have difficulty with.

Lesson 14: Some People Work Away From Home Without Receiving Income

Overview:

This unit teaches that some people are not paid for the work they perform. This work is called volunteer work. People who do volunteer work because they think of others and derive pleasure from the good they do.

Objectives:

To help children discover that

a. Many people volunteer to do work away from home without receiving income.
b. People who volunteer to do work away from home without receiving income derive pleasure from the good they do.
c. Volunteer work is important to a free society.
d. Volunteering requires that we think of others.

Learning Activities:

1. Arrange a display of posters showing a variety of volunteer activities.
   a. March of Dimes
   b. Heart Fund
   c. Easter Seal
   d. Etc.

   Talk about the meaning of the word "volunteer". Discuss other volunteers in the community.
   a. P.T.A.
   b. Church work
   c. Charity collections
   d. Civic organizations
   e. Neighborhood groups
   f. Father refereeing a baseball game
   g. Girl Scout or Boy Scout workers
2. Make a cutout mural entitled "Everyone Can Be a Volunteer".
3. Read "We Will Do It" in text. Discuss how children can participate in volunteer work at home. Make a list of volunteer jobs the children can do at home--encourage them to report what jobs they do at home during the unit.
4. Write up these activites in an illustrated experience chart.
5. Invite a representative from the various welfare agencies to come to the class and tell the children how their parents' money and volunteer workers help make their community a better place to live. Afterwards discuss what would happen if there were no such agencies.
6. Write creative stories and illustrate how volunteers help the community. Put these stories into a class scrapbook.
7. Invite one or more of the following research people to visit the class and discuss volunteer work:
   a. Sunday school teacher
   b. League of Women Voters
   c. Person from armed services
8. Read "A Leak in the Dike" and "Kula and the Doctor" and discuss how volunteer work helps others.

9. Show the film "The Wish to Give". 15 minutes, color Educational Films Sales. University Extension. University of California. Discuss.

Duration of Unit: One to two weeks

Evaluation:
Continuous throughout the unit. Also these activities in the Activity Book: "Which of These People Might Be Volunteers" and "How Can Volunteers Help?"

Lesson 15: Transportation is Needed

Overview:

This unit is designed to teach the various kinds of transportation, their uses, and the relationship that transportation has on our lives.

Objectives:

1. To help children discover that transportation makes trading possible between specialists who live far apart.
2. To help pupils discover that faster and cheaper transportation encourages trade.
3. To help children discover that where transportation is not developed, there is little trading. In such places most goods and services are produced at home.
4. To show that kinds of transportation depend on many factors:
   a. The countryside
   b. The tools and machines and other resources available to build a transportation system.
   c. The number of skilled people available to build and operate a transportation system.
5. To help pupils understand that the development of a transportation system requires a long time and a great deal of manpower, raw materials, tools, and machinery that might have been used for more immediate satisfactions.

Learning Activities:
1. Initiate this unit with an arranged environment. Suitable pictorial materials may be obtained from:
   a. American Petroleum Institute
      Committee on Public Affairs
      1271 Avenue of the Americas
      New York 20, New York (Pipeline)
   b. American Trucking Association, Inc.
      1616 P Street, N.W.
      Washington 6, D.C.
   c. American Waterways Operators, Inc.
      1023 Connecticut Avenue
      Washington 6, D.C.
   d. American Transit Association
      355 Lexington Avenue
      New York, N. Y.

e. Transportation Association of America
220 E. 42d Street
New York, N. Y.

f. Automobile Manufacturers Association
366 Madison Avenue
New York, N. Y.

g. Association of American Railroads
63 Vesey Street
New York, N. Y.

h. Air Transport Association of America
527 Madison Avenue
New York, N. Y.

These materials, along with discussion by the class, will stimulate interest in the new unit.

2. Note the different types of transportation used between communities and within the community.
3. As a class, write an experience chart on the kinds and uses of transportation. Let the children copy these stories into individual booklets. Illustrate with pictures cut from magazines or with drawings.
4. Make a display of toy vehicles, showing the different kinds of transportation in their city.
5. Make a display of kinds of transportation in faraway places. This display might include clay or paper mache' figures of animals, canoes, rafts, etc.
6. Develop a creative imagination, and at the same time help the children realize how important good transportation is to the city, by letting the children finish stories of what would happen if storms, etc., prevented food and supplies from being delivered.
7. Discuss the many people and the jobs that they perform in producing good transportation.
   a. traffic policemen
   b. construction crews
   c. road department men
   d. railroad workers - engineers, switchmen, brakemen, dispatchers
   e. airport workers - mechanics, pilot, stewardesses, men who run control tower and runways, etc.
8. Invite an engineer, etc. to come and speak to the class about the men who keep the railroads (airlines, etc.) running smoothly. Write this speaker a "thank you" note.
9. Show one of the following films:
   a. Boy of India: Rama and His Elephant. 1 reel, 11 min., sound, b & w $60, color $120, Coronet.
   b. Elephant Baby - 1 reel, 11 min., b & w $60, color $160, Encyclopedia Britannica.

   These films point of why transportation has not developed in some countries, how specialization is determined by surroundings, climate, and availability of human skills, and how lack of transportation can hinder specialization even though other conditions may be favorable.
10. Take the children on one or more of the following field trips:
   a. Visit a railroad station and find out the uses of the various freight cars.
   b. Visit a freight airport to discover the special kinds of goods carried by plane.
   c. Visit a harbor area.

   All of these trips are designed to help the children understand how transportation makes specialization easier and how specialists are able to trade between towns and countries.

11. Take the children for a ride on a means of transportation that they may not have ridden on.
12. Arrange a library table of books on transportation. These books should include those on the child's reading levels as well as books to be read and discussed by the teacher.
13. The recorded lesson and discussion included with the manual is a good culminating activity.

Evaluation:

The student's activity book contains three pages that are good for evaluating this unit:

"How Do They Travel?" Children choose the appropriate means of transportation and destination for each object.

Lesson 16: Reward For Our Work

Overview:

The purpose of this unit is to teach the children that we work for money, and money is our medium of exchange.

Objectives:

1. To show that people who work away from home usually receive a reward called income.
2. To show that producers away from home usually receive their income in the form of money.
3. To show that money is a convenient device to measure the price of goods and services produced.
4. To show that money is gladly accepted by everyone for the goods and services he produces.
5. To show that money can be easily saved.
6. To show that without money people would find trade difficult; that a lack of trade hinders specialization; that a lack of specialization limits the quality and variety of goods and services; and that a lack of quality and variety of goods and services limits consumers' choices.

Learning Activities:

1. To help the children understand the importance of money as a medium of exchange and the inconvenience of the barter system, the class can read "The Tuba Factory" found in the manual.
2. To further the concept of problems encountered with the barter system, read and discuss "Fair Trade" in the text.
3. Demonstrate the difficulty of shopping under the barter system. Prepare a display comparing one item's prices in "Money City" and "Barter City". The children could try to trade among themselves using marbles, clay, glue, etc. The point to make is that shopping in a barter economy is very difficult.
4. Read these two stories on the difficulties of barter:
   a. The Peddler's Clock by Mabel Leight Hunt. Grosset & Dunlap, New York: 1943.
   b. The Trading Place in Lost & Found by Robin Palmer. pp 145 - 55. Boston: Heath, 1955.

c. From Barter to Gold by Solveig Pulson Russell. Chicago: Rand McNally, 1961.
d. It's A Deal by Paul Stroyer. McDowell, Oblensky: New York.

5. To teach the role of price differences in everyday life, the class could go to a department store and find the prices of several articles that vary greatly. The class can then arrange the prices in order from lowest to highest. This exercise will help the children realize that all goods do not have the same price.
   This same exercise could be carried out using a catalog and arranging a bulletin board. This bulletin board might be entitled "Know the Price Before You Buy".
6. Discuss the various ways that money can be used: buying and selling goods, lending and borrowing, paying debts, giving to charity, saving, carrying out other transitions.
7. Display pictures or articles of the different kinds of money used in various countries of the world. The point is that different countries use different forms of money, but all people within that country use the same form of money.
8. Act out one of the playlets found in the book to illustrate that the exchange of goods is easier with money.
9. Read "The Cow With the Loudest Moo" in manual.
10. Complete the activities in the Activity Book.

Duration of Unit: One to two weeks, depending on interest.

Evaluation:
Teacher observation on classroom discussion.

Lesson 17: Why Some Incomes Are High and Others Are Low

Overview:

This unit teaches that incomes are rewards for doing useful work, and that the income is high or low because of certain factors.

Objectives:

1. To help pupils discover that the incomes people receive for working away from home differ because of:
   a. education
   b. demand
   c. supply
   d. seasonal work
   e. production
   f. risks involved in the job
2. Divide the class into six committees, each representing one of the reasons why incomes vary. The committees can find pictures or draw pictures of occupations that represent these reasons. Discuss and assemble.
3. Read and discuss "Read to Me About Charlie" - how could Charlie have earned more money.
4. Compare jobs at home of class children with those of their older siblings. Why do older siblings earn more?
5. Suggestions in the manual for discussing why some workers produce faster and better than others, why store owners deserve higher earnings than people who work for them, how the length of working hours can affect earning, and how the supply of, and demand for, labor affect wages are good.

In addition to these suggestions, the child could summarize these finds on an experience chart.

6. Make a survey of jobs in the community and determine what reason influences the income of each job's employees.
7. Instill that many important jobs pay low incomes. Make a mural display of these jobs.
8. Read "Why There Are So Few Blacksmiths" found in text. This story tells how demand seizes or creates jobs.
9. Take a walk through the community and point out to the class jobs that have been replaced by new jobs because of automation.
10. Make a list or a display of ways that employers advertise for employees. It will be fun to act out an interview for a job, in response to an advertisement.

Duration of Unit: One to two weeks

Evaluation:
Activity page "Who Earns More?"

Lesson 18: How Do We Get Our Money's Worth?

Overview:

We must buy food, clothing, and shelter - these are our basic needs. The rest of our income is spent after these needs are met. Choices depend on responsibilities, etc.

Objectives:

1. To help children understand that because of limited income and unlimited desires we have to learn to make wise choices as consumers.
2. To help children become aware that desires can be divided into important, more important, and most important.
3. To help children discover that once the most important desire has been satisfied, the less important becomes more important.
4. To show that how families spend their income depends on price, tastes, and size of income.
5. To show that most families decide by themselves how to spend their incomes, where to spend, and when to spend.
6. To show that factories and stores produce and sell a wide range of goods and services to satisfy a wide range of choices.
7. To show that factories and stores try to produce and sell better and better goods and services at lower and lower prices because families shop where they get their money's worth.
8. To show that as people's choices change, factories and businesses change the kind and quantity of goods and services they produce.

Learning Activities:

1. Read "Ten Pesos for Catalina" to class and discuss why we must all make choices.
2. Ask the children to make a list of things they would like to have for their birthdays. Then tell them they have only five dollars. Let the children see how amount of money restricts their desires.

3. Make a mural display of items a family wants under these headings: "Important", "More Important", and "Most Important". Let the class decide which pictures will go under each heading. Cut pictures from magazines.
4. Role playing. Let the children pretend to be buyers with different incomes and obligations. See how these facts influence choices.
5. Compare the prices of certain items in food stores over a period of two weeks. Determine when is the best time to buy each item. Also the reason for the rise or fall.
6. Compare prices of the same item in different stores. Determine where you get the best buy. These prices could come from grocery store fun page ads.
7. Work activity pages in activity book.

Duration of Unit: One week

Evaluation:
Teacher evaluation of children in role playing as well as independent work in activity book.

Lesson 19: Families Buy Many Goods And Services Together

Overview:

This unit teaches that we all pay taxes to the local, state, and federal governments and that together we buy many things with these taxes. Some pay more taxes than others, but we all share the goods and services equally.

Objectives:

1. To help children discover that families buy many goods and services together because -
   a. The purchase of some goods and services by individual families would be very expensive and wasteful of the country's resources.
   b. Many families would be excluded from the use of such goods and services if they were bought by individual families for their own use.
2. To help children understand that people pay taxes to the city, to the state, and to the U. S., so that these governments can buy for the people what they cannot buy, or cannot buy as well for themselves.
3. To help children understand that although everyone has to pay taxes, some families pay more, others less. But regardless of the amount of taxes different families pay, they all benefit from the goods and services they buy together.

Learning Activities:
1. Initiate with a film. "What Our Town Does For Us". 1 reel, 11 min., b & w $60, color $120, Coronet. Film shows the services provided by the government, how the government is organized, and how taxes pay for the services city people enjoy.
   Discussion to follow.
2. Take a walk to observe some of the goods and services that families buy together. List these on the blackboard. Make an experience chart entitled, "What Families in Our Town Buy Together". Illustrate.
3. Prepare a picture display of services and goods that the U. S. buy together. The teacher can get pictorial information from the agencies and organizations listed in the manual.
4. Read "What Do Taxes Do?" in text. Afterwards discuss how people pay taxes to the city, the state, and the U. S. and how these governments pay for goods and services.

5. Invite resource people to talk to the class and discuss their jobs and how taxes pay for them:--policeman, postman, mayor, county agent, etc.
6. Read "A Visit to the County Agent" and "A Day With the President". Follow with discussion suggested in the manual. Read "The Big, Big Shopping List". These stories illustrate the goods and services that families buy together and how these people make our life safer and happier.
7. Arrange a table of library books on the children's reading level on subjects about goods and services that are bought with taxes. Encourage the children to share these with each other.
8. Culminate with the recorded lesson and suggested discussion in the manual.

Evaluation:
Independent working of exercises in the Activity Book - "Who Pays For What We Use" and "Are These People Paid With Taxes?"

Duration of Unit: Two weeks

Lesson 20: What We Do With The Income We Don't Spend

Overview:

The purpose of this unit is to teach that we save our extra income for various reasons. It also teaches that some families spend all of their income and cannot save.

Objectives:

1. To show that many families do not spend all their income.
2. To help children understand that income not spent is saved.
3. To help children understand that families save for old age, for emergencies, for special things, for their children's education, or to go into business.
4. To help children understand that there are several ways to save money: it can be kept at home; it can be loaned to other people; or it can be kept in the bank.
5. To help children understand that to save, we have to learn how to choose between things that we think are important today and things that may be very important to us tomorrow.
6. To show that some families spend almost all their income and that they have little or no money left over to share.

Activities:
1. Initiate with the recorded lesson and discussion.
2. Make an art display of pictures illustrating reasons people save.
3. Read "The Grasshopper and the Ants" in manual and discuss.
4. Read "Let's Save Money" in manual. Discuss different reasons for saving money.
5. Take a field trip to the bank and learn of the many different ways to save money.
6. Start a class project and save money for a trip. Determine how to spend money wisely for supplies of project in order to save the most money, etc. Go on the trip as a class.
7. Read "Peter the Eater" in text. Discuss how we must give up some things in order to save for other things.
8. Complete the following activities in the Activity Book: "How Does Bill Take His Savings to the Bank?" and "What Did These People Save For?"

9. Filmstrip: "It Pays to Save: 16 frames in the series "Growing Up" with captions. b & w $5.00. Popular Science Publishing Company, Audio-Visual Division.

Evaluation:
Teacher evaluation.

Duration of Unit:
Two weeks - project continues as an outgrowth of the unit until completion and trip - possibly end of school year.

Lesson 21: What Does The Bank Do With Our Savings?

Overview:

This unit is designed to show the children the operations of the bank - how they lend the money that we save, how the people who borrow the money pay interest, and in turn how we make money on our money saved in the form of interest from the bank.

Objectives:

1. To show that banks lend the savings that people have deposited.
2. To show that those who borrow from the bank must pay the money back with interest for the use of the money.
3. To show that the bank pays some of this interest to the savers who have allowed the bank to lend their savings to others.

Activities:

1. Introduce the unit with the recorded lesson and discussion found in the manual and in the text.
2. Read the playlet "A Trip to City Bank" to the class and discuss the importance of savings and the importance of banks. Afterwards, let the class act the playlet out themselves.
3. Visit a bank. Let the bank official show how people put their savings in the bank, how they withdraw their savings, and how they ask for loans.
4. Play the banking game as explained in the manual.
5. Invite a banker to come to class and explain what a bank does and how a bank works. Afterwards, the children can make a display of items that the bank's loans help to produce or help people to buy.
6. Make a picture display of banks in the community.
7. Read the story "How the Bank Helped Littletown".
8. Role playing. Act out problems facing the banker as suggested in the manual.
9. Read and discuss "Tony and the Banker" in the text. Discuss the difference between saving money in the bank and in a piggy bank.
10. Discuss the origin of banking. Read the story "The Happy Goldsmith" to the class. Afterwards, discuss the similarities and differences between the Goldsmith's bank and banks today.
11. Culminate with independent work on activities in the activity book.
    a. "What Happened at the Bank?"
    b. "What Must the Bank Learn?"

Evaluation:
I would evaluate the independent work in the activity book as well as class participation.

Duration of Unit:
One to two weeks, depending on the interest and understanding of the children involved.

Lesson 22, 23, 24: What We Need To Go Into The Banking Business, The Clothing Business, and Building Business

Overview:

The purpose of these units is to discuss the roles of materials, labor, workplace, tools, and the businessman in the business world. These lessons are designed to help the children realize the risks and responsibilities of the businessmen and the role that the bank plays in business. These lessons also point out rules made by the city, state, and U. S. governments to protect the businessman, the people who work for him, and the people who buy from him.

Objectives:

1. To help children discover that materials, labor, workplace, and tools are needed to produce goods.
2. To help children understand that it is important to choose a site that is favorable for producing and selling goods.
3. To show that the businessman is needed to combine the materials, labor, and tools to produce goods.
4. To help children discover that if a businessman does not have enough savings of his own, he can borrow other people's savings in order to go into business.
5. To show that the bank is an important source of the money that the businessman needs to go into business. If the businessman is honest and if his plan is a good one, the bank lends him the savings that have been put there by others.
6. To help children discover that the businessman has to sell his goods as cheaply as other businessmen, or produce better goods for which the customer is willing to pay a higher price.
7. To help children discover that the businessman needs customers to buy his products.
8. To show that the businessman receives a reward in addition to that which he receives for his labor. This added reward is for his worry (risk taking) and is called profit.
9. To help children discover that the city, state, and U. S. governments make rules to protect the businessman, the people who work for him, and the people who buy from him.

Activities:

1. Initiate the unit with a filmstrip or story of "The Little Red Hen". Talk about the things little hen needed to make her bread. This is a light way to approach the unit, but an enjoyable way for the children.
2. Arrange a table display of necessary materials, tools, and labor to produce bread. On the wall above, put a series of cutouts showing the following workers:
   a. mixer
   b. molder
   c. oven operator
   d. slicer
   e. wrapper

Let the class discuss whether the materials and labor alone would be enough to produce bread, and how tools and a workplace and the businessman are also needed.

Prepare another section of the display to show the materials and tools needed to produce clothing. Drawings placed on the wall behind the table can show the specialists who help produce the clothing. The drawings should be labeled:

a. designer
b. patternmaker
c. cutter
d. machine sewer
e. hemmer
f. finisher
g. presser

A similar section could be showing the tools, materials, and specialists needed in building. Use toys, models, cutouts, samples, of materials, or drawings.

3. Read and discuss the following selections from the text:
   a. "A Visit to the Bakery"
   b. "Mr. Tweed and the Moth"
   c. "Bobby the Builder"
4. To help the children visualize the location of the businesses, draw a map and locate them and their surroundings. Discuss whether the locations are favorable for producing and selling goods. The manual contains several good questions.
5. To emphasize the role of the bank in businesses, read and discuss the following poems and stories:
   a. "Mr. Wooley, the Businessman"
   b. "Mr. No-Good"
   c. "Mr. Hall, the Businessman"
6. Compare the prices of breads, clothing, and building materials and determine which is the best buy and why. Brochures, full page grocery ads, etc. are good for a discussion of this type.
7. To help the children understand why the businessman receives a reward called profit in addition to the income he receives for his labor, the class can read and study the discussion pictures in the text: "Why Is The Owner Worried?"
8. Take a field trip to a bakery or a clothing manufacturing plant or a construction site and see the division of labor and the tools and materials being used.
9. Draw pictures of the floor plans of the homes of the children in the room to show that the builder tries to meet different tastes and incomes so that people will buy the houses he builds. Discuss that not everyone wants to live in the same kind of house. Assemble these drawings into an exhibit entitled "Builders Make Many Kinds of Houses for Us to Live In".
10. To help the children understand how businessmen try to find better and cheaper ways to make clothes, the children can make a display entitled "Businessmen Produce Many Different Materials". The children can bring sample materials either from home or from dress shops of natural materials, man-made materials; those from within this country and from foreign countries.
11. To help the children understand that rules protecting property are needed for the proper operation of businesses, the class can invite a representative from one of the three businesses being studied to come and talk about the rules that businesses have to follow and who enforces them. Afterwards, a display can be made from drawings or cutouts entitled "Rules for the Businessman".

12. Read the following poems and stories:
    a. "Say Hello to Mr. Hall"
    b. "Snip and Sew"

    Show these films and filmstrips:
    a. "The Big Bakery"
    b. "The Factory: How A Product Is Made"
    c. "George's New Suit"
    d. "Making Cotton Clothing"
    e. "What Do Fathers Do?"
    f. "New Houses: Where They Come From"
    g. "Machines That Move Earth"

    See the manual for more complete information on each of these references.
13. Encourage the children to read from the library table books on these subjects. Several are suggested in the manual.
14. Recorded lessons and discussions to culminate unit.

Evaluation:

Evaluation will be continuous throughout the unit as the children show understanding of the material by discussion and through working on projects. Further evaluation will be gained from their independent work on the following activity book pages:

a. "What Will the Baker Need?"
b. "How Do We Get Our Bread?"
c. "What Happens to Savings?"
d. "What Will the Clothes Maker Need?"
e. "How Do We Get Our Clothes?"
f. "What Happens to Savings?"
g. "What Will the Builder Need?"
h. "How Do We Get Our Houses?"
i. "What Happens to Savings?"

Duration of Unit:

This unit should last approximately four weeks, depending on the interest of the students.

Lesson 25: What Happens When People Buy All That Is Produced?

Overview:

The purpose of this unit is to teach the children that as people save or spend their incomes, they help other people to earn an income.

Objectives:

1. To remind children that people may spend or save their incomes.
2. To remind children that savings help businessmen to build factories and to buy tools and machinery.
3. To help children discover that if people spend income on goods and services, producers can continue to produce and workers can continue to earn an income.
4. To help children discover that advertising helps producers tell about their goods so that people will know about them and want to buy them.

Activities:

1. Initiate the unit with the recorded lesson. The pictorial discussion that follows in the text is good.
2. Read "Round and Round Go the Wheels". This poem describes the role of production, distribution, and consumption in our economy. Discuss each step in the wheel.
   As an outgrowth of the poem, make a mural or series of pictures entitled "From Producers to Consumers" showing production, distribution, and consumption. Show factories, boats, airplanes, trains, and trucks as well as stores and salesmen distributing the products; and finally people eating, wearing clothing, living in houses, riding in cars, etc. for consumption.
3. Make an experience chart to go along with the preceding activity.
4. Read "The Farmer's Sons" found in manual. This story explains the importance of saving in buying capital goods. The children can make a list of things that their families have or want because of savings. This list could be further developed into an experience chart.
5. To help children understand that if people spend their income on goods and services, producers will continue to produce and workers can continue to earn income, let the children act out the following game.
   Act out the parts of Mr. Baker, Mr. Wooley, and Mr. Hall (Previously studied) - see manual for directions of the game. Help the children to see that the three producers represent the whole economy, and that the workers represent all the receivers of income throughout the country who have been rewarded for producing all the goods and services.
6. Read and discuss "Happy Mr. Sweet" in the text.
7. Collect advertisements from magazines and newspapers. Discuss how ads help businessmen tell people about the goods they have to sell, and how the consumer can find and buy the cheapest or the best.
8. Work the following pages in the activity books:
   a. "Which of these Help Us to Produce?"
   b. "Buying Keeps Producers Going"
   These are good for culmination.

Evaluation:
Main evaluation is teacher evaluation of discussion and role playing.

Duration of Unit:
Approximately two weeks

Lesson 26: What Happens When People Do Not Buy All That Is Produced?

Overview:

The purpose of this unit is to teach the children what would become of the economy of the nation if people did not buy goods and services. It also points out other reasons for unemployment and how the government helps the unemployed.

Objectives:

To help children discover that -

1. The kind and amount of goods consumed determine the kind of business and the number of people employed.

2. When people do not buy goods, the workers who produce them may become unemployed.
3. There are other reasons for unemployment:
   a. some people are too old or are sick
   b. some people have been replaced by machines
   c. some people have quit one job to look for another
   d. some people have been fired because they are not good workers
   e. some people are unemployed because of weather or seasonal factors.
4. Often people who are out of work are helped by others or by the government.

Learning Activities:

1. Initiate with the recorded lesson and discussion of pictures in the text.
2. Read "The Sad Cow" in the text and discuss how consumer buying (or failure to buy) has had an effect on businesses and the number of people they employ. Also read and discuss "Happy Mr. Sweet" in the text.
3. Read and discuss "The Red Rooster" in the text. This story points out the reasons that some people are unemployed - one being machines take over their jobs.
4. Help the children make a survey of jobs in the community that have been replaced by machines. Make a display of these before and after jobs. This display could be called "People Who Are Not Working". The information gathered could be gained from a field trip or from a selection of books - "The Blacksmith", etc.
5. Discuss how to find a job:
   a. ad in newspaper
   b. watching the ads in newspapers or trade journals
   c. employment agency or state employment office

   Afterwards, the class could role play job interviewing by answering ads, etc.
6. The previous experience could be written up into an experience chart.
7. To help the children discover that people who are out of work are often helped by other people, invite either
   a. a representative of a local charity
   b. a representative of the local state employment office

   to come to school and tell about how their organization helps people find work.

Evaluation:

Complete and discuss the following activities in the activity book for evaluation of the unit:

a. "What Happens When Things Are Not Bought?"
b. "Which Producers Will Have Work Here?"
c. "Who Will Find Work Here?"

These activities enable the children to match a particular lack of buying with the unemployment it might cause, to understand how consumer buying affects productions, and to determine what factors make people employable for certain jobs.

Duration of Unit: One week

Lesson 27: What I Want To Be

Overview:

The purpose of this unit is to familiarize the children with the many good jobs from which they may choose, reasons for choosing each job, and the changing scope of jobs as inventions create new industries and old industries disappear.

Objectives:

1. To help children discover that there are many jobs from which people can choose.
2. To help children discover that there are many reasons why a person might choose his job; the job is steady; it pays well; it is satisfying work; it requires his special talents.
3. To remind children that jobs are constantly changing as new inventions create new industries and old industries disappear.

Learning Activities:

1. Initiate this unit with an arranged environment. As the children come in the first day, have a library table of books as the center of attention in the room. Some suitable books are:
   a. Greene, Carla - I Want To Be A (n) . . . . . Children Press - Chicago (These books are on first and second grade reading level.)

Airplane Hostess - (1960)	Musician - (1962)
Animal Doctor - (1956)	News Reporter - (1958)
Baker - (1956)	Nurse - (1957)
Ballet Dancer - (1959)	Orange Grower - (1956)
Baseball Player - (1961)	Pilot - (1957)
Bus Driver - (1957)	Policeman - (1958)
Carpenter - (1959)	Postman - (1958)
Coal Miner - (1957)	Restaurant Owner - (1959)
Cowboy - (1960)	Road Builder - (1958)
Dairy Farmer - (1957)	Scientist - (1961)
Dentist - (1960)	Ship Captain - (1961)
Doctor - (1958)	Space Pilot - (1961)
Farmer - (1959)	Storekeeper - (1958)
Fireman - (1957)	Teacher - (1957)
Fisherman - (1957)	Telephone Operator
Homemaker - (1961)	Train Engineer - (1956)
Librarian - (1960)	Truck Driver - (1958)
Mechanic - (1959)	Zoo Keeper - (1957)

   b. Hastings, Evelyn B., About Postmen - Chicago: Children's Press, 1957.
   c. Hefflefinger, Jane, Firemen - Los Angeles; Melmont, 1957.
   d. Johnson, Siddie Joe, About the Engineer of a Train, Chicago: Children's Press, 1959.
   e. Lattin, Anne, Peter's Policeman, Chicago: Follett, 1958.
   f. More complete listing in manual. Behind the table, have pictures of the different vocations.
2. Read and discuss these books. The children can divide into groups and divide the jobs into headings under "People Choose Their Jobs Because . . . . "
   a. "They Like Their Jobs"
   b. "They Have Special Talents"
   c. "The Job Pays Well"
   d. "The Job Is Steady"
3. Invite some of the parents whose jobs are especially interesting to come and visit the class and explain what they do and why they chose their job. Afterward, the class can discuss whether they would like to do such work.
4. Read the following poems to the class and discuss the variety of occupations:
   a. "The Dentist"
   b. "The Cobbler"

c. "Manual System"
d. "The Postman"
e. "My Policeman"
f. "General Store"
g. "Engineers"
h. "The Ice-Cream Man"
i. "Going Places"

After the discussion some of the children may want to make up their own verses about what they want to be, or draw their own illustrations for the poems.

5. Play the game "Who Knows More Jobs?" as described in the manual.
6. Play "Charades" and act out jobs. Afterwards, let the class decide if the job involves production of goods or production of services.
7. Draw pictures and make-up stories about jobs they want to do.
8. Discuss "What Shall I Do?" in the text. Talk about the jobs which need more schooling or training - which less.
9. Cut out pictures of people doing different kinds of work from magazines. Put these pictures in individual booklets entitled "People At Work". Discuss whether these jobs were available long ago and the reasons the people in the pictures may have had for choosing their jobs.
10. Expand these discussions into an experience chart dictated and illustrated by the children.
11. Read "Why There Are So Few Blacksmiths" and "How Producers Changed" in the text. Afterwards, discuss other jobs that are less in demand today and what job they might choose to do instead and whether they think jobs will be the same when they grow up as they are today.
12. Culminate with the recorded lesson and discussion as suggested in the manual.
13. Learn the songs suggested in the manual.

Evaluation:
Activity page entitled "Why People Choose Their Jobs" plus teacher evaluation of all activities.

Duration of Unit: Two or three weeks

Reading Curriculum

I. Objectives:

A. Comprehension
The child will be able to recognize at least 95% of the words in any selection that he reads and will be able to demonstrate that he can answer at least 80% of any questions referring to:
1. Facts--directly stated in the selection
2. Main ideas of sentences, paragraphs or stories
3. Inferences that may be drawn from the selection content
   a. word meanings
   b. conclusions based on facts presented
   c. hypotheses about facts omitted

B. Word Recognition Skills
1. Sight Words
The child will be able to:

a. Identify immediately the 90 basic nouns and the 120 service words of the Dolch list.
b. Identify immediately all words learned at each level of reading series employed.

2. Phonic Analysis
The child will be able to:
a. Read sounds represented by individual letters.
b. Blend the sounds together.
c. Identify the name of the word produced.
d. Tell the meaning of word produced.
e. Change the vowel sound from long to short to see if it changes the blend to a known word.
f. Apply the first five steps in decoding any unknown word.

3. Using Context
The child will be able to:
a. Deduce the meaning of unknown words by using picture clues.
b. Deduce the meaning of unknown words by anticipating the word that completes a familiar pattern of language.

II. Rationale:

Most of the children were found to have no reading ability or were unable to identify words graded beyond the pre-primer level. Even when they could name the words they were unable to maintain comprehension when reading them in context.
The reading curriculum was designed to overcome these deficiencies by the use of instructional programs that would teach the skills outlined in the objectives and by methods that were different from ones previously employed in regular classrooms.

III. Materials Used: (1 classroom)

		Cost	Teacher Set
Secure From:	Ginn and Company 717 Miami Circle, N.E. Atlanta, Georgia 30324		
	Ginn Tutorial Series (100 Edition)	$25.00	
Secure From:	Science Research Associates 259 East Erie Street Chicago, Illinois 60611		
	Distar Reading I		
	1 Teacher's Kit		$50.00*
	2 Student Kit (10 children)		67.00
	2 Take Home Sets		
	Distar Reading II		
	1 Teacher's Kit		75.00
	2 Take Home Sets		110.00
	SRA Satellites Kit		58.20
	SRA Linguistic Series		
	6 Pig Can Jig (Level A)	6.78	
	6 Fox in a Den (Level B)	6.78	

*1972 Catalog

		Cost	Teacher Set
Secure From:	Charles E. Merrill Pub. Co.		
	1300 Alum Drive		
	Columbus, Ohio 43206		
	12 Nip the Bear (1)	$11.52	
	12 Red Deer (2)	11.52	
	12 Bibs (1)	11.52	
	12 Nicky (2)	11.52	
	1 Teacher Edition Each Level	4.80	
	2 Answers Keys	.80	
Secure From:	McGraw-Hill Book Co.		
	Manchester Road		
	Manchester, Mo. 63011		
	New Practice Readers		
	6 Book A	1.38	
	2 Answer Keys	.60	
	6 Book B	1.38	
	2 Answer Keys	.60	
Secure From:	Continental Press Co.		
	127 Cain Street, N.W.		
	Atlanta, Georgia 30303		
	Reading-Thinking Skills @ $3.50	35.00	
	Pre-Primer 1 First 1 Third 1		
	Pre-Primer 2 First 2		
	Primer 1 Second 1 Third 2		
	Primer 2 Second 2		

IV. Programming Instruction:

There were two basic components to our reading program: (1) building word attack skills, and (2) building a sight vocabulary and comprehension. See the details that follow for the specifics of each component.

A. Word Attack Skills:

1. Introduction:
   In the beginning stages of reading, a major word attack skill to be mastered is phonic analysis. Phonic analysis is the process by which the child unlocks the pronounciation of an unknown word. In order to master the process, he must learn to use the following efficient procedure - i.e. cat.
   a. Look at the first letter of the word
   b. Say the sound the letter stands for /k/
   c. Look at the second letter of the word
   d. Say the sound that the letter stands for /a/
   e. Blend the sounds of second letter with the sound of the first /Ka/
   f. Look at the third letter
   g. Say the sound that the third letter stands for
   h. Blend the sound of the third letter with the sounds of the first two letters /Kat/
   i. See if the word you've said is a word you know
   j. Read the whole sentence again with your word in it to see if it makes sense.

It is not necessary that the child learn all the letter-sound relationships before he learns to use the efficient procedure. Teaching one or two consonant letter sound relationships and one vowel letter-sound relationship gives sufficient knowledge to enable him to sound out a real word.

It was not necessary to make up a new instructional program to teach phonic analysis since there were several on the market such as Words In Color, Tag Series, Open Court, and the Distar Reading Program.

Distar Reading was selected because:

a. It teaches the efficient procedure.
b. It develops at a pace consistent with the learning rates of students in non-graded class.
c. The teaching guides provided explicit directions for teachers to follow.
d. Training could be secured from the authors of the program.
e. It could be used for individual or small group instruction.
f. It handles the difficulties in teaching phonic analysis in the following way:
   (1) Continuous sounds introduced first in beginning position.
   (2) Stop sounds (t, n) are introduced at the end of words.
   (3) Regular words taught first (one symbol stands for one and only one sound)
   (4) Irregular words are taught as "funny words". Funny words are those words that don't blend into the word the letters spell (was).
   (5) Small letters (have) are used to represent letters which stand for no sound.
   (6) Diacritical marks are used for long vowel sounds.
   (7) All letters are in lower case form.

2. Terminal Behavior:
   When he comes to a word he does not know, the child will be able to use phonic analysis to pronounce the unknown word.
3. Materials: (Distar Reading I)
   The Distar Materials have been organized into 2 basic kinds: teacher materials and student materials.
   Teacher materials consist of:
   a. Four Presentation Books
      (1) Related Skills
      (2) Sounds and Reading - Book A
      (3) Sounds and Reading Sounds - Book B
      (4) Sounds and Reading Sounds - Book C
   b. Teacher's Guides
   Student materials consist of:
   a. Take-Home Blending Sheets
   b. Take-Home Sound Symbol Sheets
   c. Take-Home Writing Sheets
   d. Take-Home Writing Sheets
   e. Workbook (worksheets)
4. Sequence Of Instruction:
   Distar Reading I consists of 159 lessons that involve instruction in readiness skills and the understandings and reading skill listed previously. The breakdown below shows how materials are used to accomplish the objectives and the amount of time involved in each series of lessons:

Lessons 1 - 5	Time Involved (mins.)
Symbol-Action Games	6
Blending-Say It Fast	5
Sounds - Book A	4
Blending Sheets	4
Sound-Symbol Sheets	5
	24 mins. Total

Lessons 6 - 17	
Sounds - Book A	4
Symbol-Action Games	6
Blending-Say It Fast	5
Rhyming	6
Sound-Symbol Sheets	5
	26 mins. Total

Lessons 18 - 29	
Sounds - Book A	4
Blending-Spell It By Sounds	5
Blending-Say It Fast	5
Rhyming	6
Sound-Symbol Sheets	5
	25 mins. Total

(Reading Sounds - Book A - Lessons 26 - 27 - Add 8 mins. of time)

Lessons 28 - 40	
Sounds - Book A	4
Reading Sounds - Book A	8
Blending-Spelling By Sounds	5
Blending-Say It Fast	5
Sound-Symbol Sheets	5
	27 mins. Total

(Worksheets begin Lesson 32 - Add 6 mins. of time)

Lessons 40 - 58	
Sounds - Book A	4
Reading-Sounds - Book A	8
Blending-Spell It By Sounds	5
Stories	5
Writing Sheets	5
Worksheets	6
	36 mins. Total

Lessons 59 - 109	Time Involved (mins.)
Sounds - Book B	4
Reading Sounds - Book B	8
Stories	5
Writing Sheets	5
Workbook	6
	28 mins. Total

(Blending-Spelling by sounds is included in Lessons 59 - 60; Add 5 mins. for these two lessons)

Lessons 110 - 159

Sounds - Book C	4
Reading Sounds - Book C	8
Stories	5
Writing Sheets	5
Workbook	6
	28 mins. Total

5. Applied Reading:
After Lesson 110, children can be given SRA Basic Readers, A Pig Can Jig, and SRA BRS Satellites Readers as independent reading. The vocabulary in these materials parallels that of Distar Reading I.

6. Diagnostic Teaching:
Distar Reading I is generally given in small groups of 4 - 6 children. The teacher makes charts to keep up with each group's performance.
During instruction, the teacher gears instruction to slowest children in the group. If they fall too far behind, they are moved to a less advanced group.
Instructional materials included mastery tests for different parts of program. Children are recycled to prior levels of program when they do not pass mastery test.
The teacher is free to speed up instruction for those who seem capable of moving ahead. Procedures for doing so are outlined on pps. 88 - 90 of Teaching Guide.
Placement tests are also available for children who transfer into the program.

7. Distar Reading II
The Distar Reading II continues on essentially the same basis as the Distar I. There are 180 lessons on the second level. Time allotments of 30 minutes, instructional groups and instructional procedures are maintained. However, 25 minutes of additional seatwork is suggested.
Three new levels - D, E, F - of the Sounds and Reading Sounds are introduced. Beginning with Lesson 201, emphasis is placed on sight vocabulary development with words that appear frequently. Another new skill developed in the word attack program is called "vowel conversion". The child is taught to change vowel sounds if the first attempt at sounding out a word fails.
Take-Home stories are set up to cover a two-day period. On the second day, children are expected to answer comprehension questions. Another addition is the introduction of comprehension lessons to teach children to read and follow directions. This begins with lesson 163 and continues through the entire level.

Children who complete the Distar II level should be reading at 3rd grade level.

8. Experience With Distar Reading I in Title III ESEA Project Monroe County

Those children who reached lesson 159 of program could read the sounds of unknown words to get their pronounciation.

Some children who had been recycled 3 times through lessons 1 - 40 were taken out of the program until they had progressed further in sight-reading program.

B. (Sight Word and Comprehension Building)

1. Introduction

Children who do not profit from group instruction often show the following characteristics:

a. Inadequate sight vocabulary
b. Inability to maintain comprehension due to the inadequate sight vocabulary
c. Difficulty with fine discrimination words such as they-then, there-three, fall-fell
d. Reversal errors with word pairs like saw-was, on-no
e. Lack of interest in reading due to frustrations involved in reading

In order to overcome the inadequacies resulting from prior group instruction The Ginn Tutorial Program was instituted because:

a. It provides individual tutoring for each child
b. It has an instructional program that could be followed by the teacher aide
c. It provides careful monitoring of oral reading and on-the-spot correction of errors
d. It provides for increased interest in reading by insuring successful reading practice
e. It achieves terminal behaviors sought in sight vocabulary building and comprehension

The Ginn Tutorial program is designed to be used by para-professionals after seventeen hours of training. It provides a tutor's guide that is explicit in its directions, giving the tutor specific language to use for eliciting pupil responses. In the language for the tutor there are no negative statements such as "that was wrong". The tutor says nothing when an error is made. If the child gives a correct response, she reinforces the response with praise.

The instructional program provides for teaching the basal vocabulary as sight words. Sight word instruction involves having the child attempt to read a sentence (item) in the book . . If he misses a word, the tutor points to the word on a card (on which all words of book have been alphabetized). The child looks at the word on the card and points to the matching word in the book. While he is looking at the word, the tutor tells him the name of the word and asks him to repeat it.

If the child misses the word again when rereading the sentence, the tutor calls the word by name again and asks him to locate the word on the card (auditory-visual match). She names the word again and asks him to repeat it.

In the comprehension program, the children are taught to follow directions (instruction comprehension) to answer questions based on picture content (questions comprehension), and to answer questions based on printed content (statement comprehension).

At the primer level, the child is taught to make inferences (logical comprehension) and to read short stories to get facts, main ideas and make inferences (story comprehension). Another type of comprehension (completion comprehension) is really a form of teaching the child to get meanings of unknown words by using the context.

The word analysis program begins at pre-primer level by teaching capital and small letter names. It develops into the type of exercise where child uses first letter of word as a clue to filling in context. The word analysis program was eventually dropped out of the sequence because Distar Reading was doing a better job of teaching word attack.

The child is not allowed to move from one lesson to the next until he has made at least 10 tries at correcting all errors made in the first run through the whole lesson or until he has successfully read (and comprehended where appropriate) the entire lesson without error or teacher aid.

3. Materials Needed
   a. Ginn Tutorial Set (100 edition)
      (1) Master List
      (2) Tutor's Guide
      (3) Comprehension Book
      (4) Word Analysis Book
      (5) Score Sheets
   b. Books (100 edition)

(1) Little Red Book	Pre-primer one
(2) Little Green Book	Pre-primer two
(3) Little Blue Book	Pre-primer three
(4) Little White House	Primer
(5) On Cherry Street	First Reader

4. Sequence Of Instruction (See Master List)

Through the first three pre-primer levels, the sequence is as follows:

10 lessons in sight word instruction
3 lessons in comprehension
5 lessons in word analysis

Beginning with the primer level the sequence changes as follows:

3 lessons in sight word instruction
4 lessons in comprehension
5 lessons in word analysis

The latter sequence continues until child has completed the primer and first reader.

5. Teaching Procedures (See Tutor's Guide)
6. Scheduling

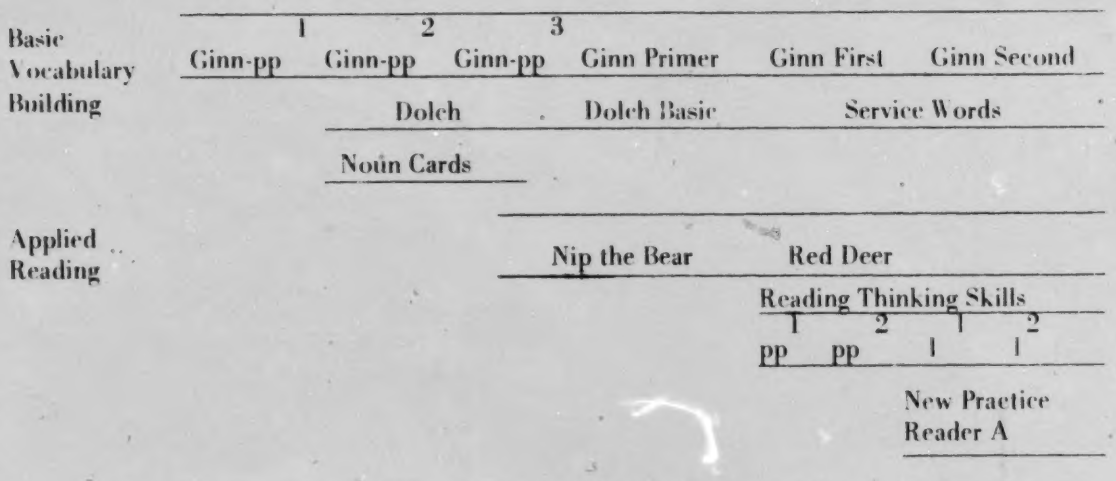
Schedule child at any time of the day for at least 15 minutes of individual instruction by teaching aide.

7. Applied Reading Program

By the time the child has finished the first three-primers and primer of the Ginn program, he has mastered 162 sight words. This is sufficient vocabulary to handle Nip the Bear on an independent basis. Nip the Bear purports to teach an additional 163 sight words but many of them will have already been learned in the Ginn program. After the first story in Nip, only 2 or 3 "new words" are introduced per story. Nip also includes comprehension exercises. Additional sight word building can be added by letting the children practice individually or in pairs with Dolch sight words that have been put on cards.

After the child moves into the first reader level, the teacher can introduce the children to Reading-Thinking Skills, pre-primer I level. The only new vocabulary introduced in these materials will come in the first three exercises. These three should be done under the teacher's or tutor's supervision. Thereafter, the exercises can be done independently after the teacher goes over the directions for completing the exercise.

Additional applied reading can be given with Red Deer, The Indian Boy (Charles Merrill) and upper level Reading-Thinking Skills (Continental Press). After the children reach second grade level, the New Practice Reader A should be introduced. On this page is a summary model that attempts to show how the basic program is related to the applied reading program.



8. Experience With Above Program In Title III ESEA Project In Monroe County Test results in January, 1971, indicated that the above combination of program can after fourteen months bring a child from the non-reader level to high second grade reading achievement level. The criterion test used was the California Reading Test, Upper Primary Form (Grades 2 - 4).

Language Curriculum

I. Language Development

A. Introduction

The Illinois Test of Psycholinguistic Abilities indicated that 99 percent of the children selected for the non-graded classes had a psycholinguistic age considerably lower than their chronological age. The intelligence test revealed the same deficit in language. The testing results indicated, therefore, a relationship between language acquisition and intellectual ability.

The decision was made, therefore, to initiate the kind of language curriculum that attempted to overcome the conceptual difficulties stemming from the language disability. The instructional program that appeared to be especially designed for the above purpose was Distar Language. Distar Language was incorporated along with informal language activities as the major language development program in the non-graded classes.

B. Objectives

Terminal Behaviors Sought:

The child, in both his oral and written language, will be able to:

1. Use the concepts of size, color, form, texture, time, etc. in making statements about his environment.
2. Name precisely familiar objects in his immediate environment.
3. State precisely relationships existing among objects in his environment.

4. Categorize objects to their function or physical characteristics.
5. Compare and contrast various attributes of objects.
6. Use all classes of words correctly.
7. Apply conceptual knowledge in reacting to teacher directions and comprehending stories read to them.
8. State in correct sequence sentences, directions, or stories.
9. Speak and write at a level commensurate with other children of same chronological age/grade placement.

C. Rationale of Distar Language

According to Engelmann, the most important aspect of language is its use in uncoding observations of the environment. We use language to name objects and to talk about their particular characteristics. Higher level observation also involves classifying objects according to common characteristics (concept building).

Distar Language I is designed to teach basic language concepts to children who have not learned them without formal instruction. "The program is designed to take these children, one step at a time, teaching them to use full statements in identifying objects such as color, shape, relative size, and class name." The concepts taught are those needed for logical thinking and for the child to understand what he is taught in school.

Distar Language II consolidates and expands skills taught in the first level. In addition, Language II teaches children to analyze language and use it to describe qualities and relationships observed in the world.

As shown in the sequence of content charts (Teacher's Guide, Distar Language II, pp. 74-77), the language concepts that are taught are ordinarily assigned to content areas of arithmetic, science and social studies. Thus Distar II intends to enlarge not only the "everyday" language of the children, but also to help them incorporate the more technical vocabulary of the content areas.

D. Materials Needed

Most of the materials needed can be secured in the form of kits. They may be secured from:

Science Research Associates, Inc.
259 East Erie Street
Chicago, Illinois 60611

The teacher kit consists of the following materials: (Cost: $150.00 each kit)

Language I	Language II
Presentation Books A, B, C	Presentation Books A, B, C, D, E
Story Book	Story Book
Teacher's Guide	Teacher's Guide

The student materials consist of the following:

Language I ($35.00)	Language II ($39.00)
180 Take Home Color Books	180 Take Homes

E. Content Sequence of Distar Language

The following tables, Tables 3 - 8 (pages 66-67), were taken from the teacher's guide and are used with permission of Science Research Associates, Inc. The content and sequence are outlined in the tables.

F. General Procedures

1. Arrange children in groups. Slowest children in group of no more than 5, faster children in groups of 5 - 10.
2. Follow tasks specified in programs.
3. Separate thinking operations from repetition of statements.
4. Require 100 percent involvement of all children in group beginning with first day of instruction.

TABLE 1. Objects Used to Teach Parts in Distar Language II

Object Used	Initial Presentation	Object Used	Initial Presentation
cup	1	mouth	12
umbrella	1	eye	12
match	1	shovel	13
pencil	2	table	13
hammer	2	jet	13
hat	2	cup	14
egg	2	boot	14
wagon	2	spoon	14
sandal	2	kite	15
sled	3	car	16
arm	4	truck	16
leg	4	inside of car	18
hand	4	outside of car	18
foot	4	lamp	18
pin	4	belt	18
glasses	4	chair	18
jacket	4	airplane	19
pot	5	jet airplane	19
purse	5	sailboat	20
fish	6	rake	21
tree	6	knife	21
nail	6	toothbrush	21
book	7	telephone	22
coat	8	glove	25
window	8	broom	25
shirt	8	pants	25
body	9	cabinet	26
head	9	refrigerator	26
torso	9	garbage can	26
shoe	10	bicycle	27
clock	10	staircase	30
bed	11	closet	32
nose	12		

TABLE 2. Materials Taught in Distar Language II

Material	Initial Presentation
wood	16
cloth	18
brick	20
paper	22
cardboard	23
metal	24
leather	25
concrete	32
glass	34
plastic	36
rubber	38
china	40

TABLE 3. Locations Taught in Distar Language II

Location	Initial Presentation
beauty shop	1
forest	1
farm	2
beach	3
pet shop	3
interior of a car	4
post office	5
interior of a bus	6
clinic	7
passenger car of a train	8
movie theater	8
restaurant	9
bank	10
grocery store	10
garage	11
shoe repair shop	12
zoo	12
church	13
gas station	13
airport	14
shoe store	14
playground	15
hospital	15
cleaners	16
city	17
hotel lobby	18
kitchen	18
library	19
drugstore	20
bus station	21
in the water	21
fire station	22
sidewalk	22
sky	23
bed	23
barn	24
school	24
jungle	25

TABLE 4. Information Taught about the Calendar in Distar Language II

Information	Initial Presentation
week = 7 days	115
year = 12 months	125
month = 31 days	129
year = 365 days	155
month = 4 weeks	165
year = 52 weeks	174

TABLE 5. Information Taught about Measurement in Distar Language II

Information	Initial Presentation
ruler, yardstick -- instruments used to measure length	125
foot, yard -- units used to measure length	125
foot = 12 inches	125
yard = 3 feet = 36 inches	125
mile -- unit used to measure length	130
mile = 5280 feet	130
speedometer -- instrument used to measure speed	135
miles per hour -- units used to measure speed	135
clock, watch -- instruments used to measure time	140
seconds, minutes, hours -- units used to measure time	140
second -- smallest unit used to measure time	140
minute = 60 seconds	142
hour = 60 minutes	142
day = 24 hours	143
thermometer -- instrument used to measure temperature	151
temperature -- how hot or cold something is	151
degrees -- units used to measure temperature	151
about 98 degrees -- normal temperature of human body	151
212 degrees -- temperature at which water turns to steam	159
32 degrees -- temperature at which water turns to ice	159

TABLE 6. Occupations Taught in Distar Language II

Occupation	Initial Presentation	Occupation	Initial Presentation
librarian	123	cowboy	149
grocer	125	heavy equipment operator	150
mailman	126	scientist	151
construction worker	127	singer	152
butcher	128	deep-sea diver	153
lumberjack	129	cook	154
coal miner	130	surveyor	155
plumber	132	carpenter	156
secretary	133	telephone operator	157
electrician	134	fireman	162
photographer	135		
factory worker	137		
dentist	139		
policeman	140		
veterinarian	141		
taxi driver	142		
painter	143		
mechanic	144		
hairdresser	145		
judge	146		
truck driver	147		
waitress	148		

TABLE 7. Subjects Taught in Information Track, Distar Language II

Subject	Initial Presentation
VISUAL PROPERTIES	100
transparent	100
opaque	102
translucent	109
ANIMALS	112
carnivorous	112
(dog, eagle, fox, hawk, leopard, lion, owl, shark, tiger, wolf)	
herbivorous	114
(antelope, chipmunk, cow, deer, goat, gopher, horse, kangaroo, rabbit, sheep, squirrel, zebra)	
omnivorous	121
(bear, coyote, man, muskrat, pig, raccoon, skunk)	
without backbone	135
(ant, beetle, butterfly, fly, mosquito, octopus, spider, worm)	
with backbone	135
mammals	140
(anteater, bat, bear, boy, camel, cat, chipmunk, cow, deer, dog, elephant, fox, giraffe, hippopotamus, horse, kangaroo, lion, mole, monkey, mountain goat, mouse, pig, porpoise, rabbit, rhinoceros, seal, sea otter, squirrel, tiger, walrus, whale, zebra)	
reptiles	144
(alligator, crocodile, iguana, lizard, snake, turtle)	
fish	147
(eel, goldfish, sawfish, sea horse, shark, stingray)	
amphibians	150
(frog, mud puppy, salamander, toad)	
birds	155
(canary, chicken, duck, eagle, parrakeet, penguin, pheasant, robin)	
CALENDAR	115
TREES	121
deciduous	121
(apple, birch, cedar, cherry, maple, oak, walnut, willow)	
evergreen	125
(hemlock, holly, pine, redwood, spruce)	
OCCUPATION	123
MEASUREMENT	125
SEASONS	129

TABLE 3. Content and Location of Tests in Distar Language I

Presentation Book	Test No.	Content	Precedes Presentation
A	1	Identity and Action Statements	1
	2	Identity and Action Statements	16
	3	Polars	23
	4	Prepositions and Polars	43
	5	Under and Next to	59
	6	In front of and In back of	68
	7	Between	80
	8	Multiple Attributes, Pronouns	104
	9	Same	158
	10	Same—Different	173
B	1	Action Statements	40
	2	Categories	63
	3	Plurals	70
	4	Why	110
	5	Verb Tense	140
	6	Before—After	164
C	1	Parts	23
	2	Parts	53
	3	Or	126

TABLE 4. Prepositions Taught in Distar Language I, Book A

Preposition	Initial Presentation
Over	29
On	34
In	38
Under	43
Next to	52
In front of	55
In back of	64
Between	70

TABLE 5. Polars Taught in Distar

Polars	Initial Presentation	
Long, short	35	Strai
Full, empty	37	Fast,
Big, little	45	Heav
Loud, soft	49	Wet,
Tall, short	52	Old,
Fat, skinny	55	Soft,
Hot, cold	67	Old,
Smooth, rough	69	Light

TABLE 6. Locations Taught in Distar

Location	Initial Presentation	Lo
Sidewalk	146	Airpo
Shoe store	147	Swim
Cleaners	148	Beac
Living room	149	Post
Kitchen	150	Jung
Bedroom	151	Hosp
Gas station	152	Zoo
Grocery store	153	Gara
Clothing store	154	Train
Barbershop	155	Thea
City	156	Clini
Schoolroom	157	Rest
Sky	158	Dent
Forest	159	Libra
Fire station	160	Bus
Police station	161	Ocea
Farm	162	Park
Barn	163	

ation of Tests in Distar Language I

Content	Precedes Presentation
and Action Statements	1
and Action Statements	16
	23
tions and Polars	43
nd Next to	59
of and In back of	68
n	80
Attributes, Pronouns	104
	153
-Different	173
Statements	40
ies	63
	70
	110
nse	140
-After	164
	23
	53
	126

ght in Distar Language I, Book A

	Initial Presentation
	29
	34
	38
	43
	52
	55
	64
	70

TABLE 5. Polars Taught in Distar Language I, Book A

Polars	Initial Presentation	Polars	Initial Presentation
Long, short	35	Straight, crooked	74
Full, empty	37	Fast, slow	75
Big, little	45	Heavy, light	78
Loud, soft	49	Wet, dry	81
Tall, short	52	Old, new	83
Fat, skinny	55	Soft, hard	86
Hot, cold	67	Old, young	86
Smooth, rough	69	Light, dark	88

TABLE 6. Locations Taught in Distar Language I, Book A

Location	Initial Presentation	Location	Initial Presentation
Sidewalk	146	Airport	164
Shoe store	147	Swimming Pool	165
Cleaners	148	Beach	166
Living room	149	Post office	167
Kitchen	150	Jungle	168
Bedroom	151	Hospital	169
Gas station	152	Zoo	170
Grocery store	153	Garage	171
Clothing store	154	Train station	172
Barbershop	155	Theater	173
City	156	Clinic	174
Schoolroom	157	Restaurant	175
Sky	158	Dentist's office	176
Forest	159	Library	177
Fire station	160	Bus station	178
Police station	161	Ocean	179
Farm	162	Park	180
Barn	163		

TABLE 7. Categories Taught in Distar Language I, Book B

Categories	Initial Presentation
Vehicles	41
Food	41
Containers	59
Animals	71
Buildings	79
Clothing	85
Plants	89
Furniture	100
Tools	108
Appliances	124

TABLE 8. Objects Used in Learning Parts of [illegible]

Object Used	Initial Presentation	Object U
Match	16	Windo
Shovel	18	Mouth
Cup	20	Coat
Pencil	22	Eye
Hammer	24	Pants
Hat	26	Broom
Purse	29	Glove
Wagon	32	Car
Egg	36	Rake
Sandal	39	Dashbo
Pot	41	Knife
Table	45	Windsh
Umbrella	49	Truck
Fish	52	Toothbr
Tree	54	Jar
Nail	56	Belt
Shoe	58	Chair
Body	60	Lamp
Head	63	Garbag
Turtle	63	Boot
Flower	65	Spoon
Torso	68	Cap
Jacket	69	Cake
Arm	71	Clock
Glasses	74	Cabinet
Hand	75	Refriger
Pin	77	Door
Leg	79	Closet
Foot	81	Staircas
Shirt	81	Airplane
Nose	84	

in Distar Language I, Book B

Initial Presentation
41
41
59
71
79
85
89
100
108
124

TABLE 8. Objects Used in Each Part of Distar Language I, Book C

Object Used	Initial Presentation	Object Used	Initial Presentation
Match	16	Window	85
Shovel	18	Mouth	86
Cup	20	Coat	88
Pencil	22	Eye	89
Hammer	24	Pants	91
Hat	26	Broom	94
Purse	29	Glove	97
Wagon	32	Car	98
Egg	36	Rake	101
Sandal	39	Dashboard	104
Pot	41	Knife	104
Table	45	Windshield	107
Umbrella	49	Truck	108
Fish	52	Toothbrush	109
Tree	54	Jar	111
Nail	56	Belt	112
Shoe	58	Chair	114
Body	60	Lamp	118
Head	63	Garbage Can	124
Turtle	63	Boot	127
Flower	65	Spoon	132
Torso	68	Cap	135
Jacket	69	Cake	141
Arm	71	Clock	143
Glasses	74	Cabinet	147
Hand	75	Refrigerator	151
Pin	77	Door	156
Leg	79	Closet	158
Foot	81	Staircase	161
Shirt	81	Airplane	166
Nose	84		

5. Reinforce children who are on task. Reward children who are being good.
6. Use group and individual activities appropriately - group activities to teach concepts, individual activities to check progress of each child.
7. Give children response assistance only where difficulty indicated.
8. Use individual testing to determine whether children need to move to next level or be recycled - regroup when necessary.
9. Use concepts taught in Distar during other periods of instruction.

G. Informal Language Experiences

In addition to the formal training given in the Distar Language program the following activities developed:

1. using concepts from Distar Language in given directions at other times of the day.
2. discussing problems in room.
3. show and tell periods.
4. developing language-experience stories from filmstrips, content of social studies and science, and field trips.
5. listening to stories on records and tapes.
6. recording children's voices on tape to see how they sound.

II. Handwriting

A. Terminal Behavior Sought

The child will be able to:

1. Write cursively and match standards for letter formation, slant, alignment and spacing in all written work.
2. Sit when writing with head, arm, and paper in proper alignment.
3. Choose the best handwriting from among several samples.

B. Rationale

Many of the children selected for the non-graded classes,either wrote poorly or could not write at all (not even their names). Inadequacy of handwriting is often, of course, associated with inadequate visual-motor development.

Seventy-two of the seventy-five children selected for the program had inadequate visual-motor skills. The perceptual-motor curriculum is obviously a supportive program for the development of handwriting skills.

In addition, a program of instruction to teach handwriting skills was also needed. The Handwriting With Write and See program developed by psychologist B. F. Skinner was selected because:

1. It can be used on an individual basis.
2. It provides an immediate feedback system by use of specially treated paper and "magic" pens - the child sees yellow when response incorrect and gray when correct.
3. It incorporates procedures to produce terminal behaviors sought. The child is taught correct letter formation, slant, and alignment first, then he is taught to match his performance to a standard model.
4. It provides for transition from manuscript to cursive writing.

C. Materials Needed

The materials needed for handwriting instruction may be secured from:

Lyons and Carnahan
407 East 25th Street
Chicago, Illinois 60616

The materials and their cost are as follows:

	Unit Cost
Handwriting Book 1	$ .60

	Unit Cost
Teacher's Edition	$ 1.50
Handwriting Book 2 (Manuscript-Cursive)	.69
Teacher's Edition	1.50
Handwriting Book 3 (Cursive)	.69
Teacher's Edition	1.50
Handwriting Pen	.30

D. Content And Sequence Of Instruction
(See Teacher's Guide)

E. General Procedures
1. Books and marking pens introduced to children and procedures for using demonstrated.
2. Children are allowed to practice with materials during regular handwriting time and at other free times during day.

F. Informal Activities
In addition, the following informal activities were incorporated into the curriculum:
1. Copying language-experience stories from blackboard.
2. Individual analysis by teacher of handwriting difficulties and further help given.
3. Frequent demonstrations of correct sitting position
   a. Right handed children sit with chairs at angle that allows whole right arm on desk, head is tilted to left, and paper on left-to-right slant.
   b. Left handed children sit with chairs at angle that allows whole left arm on desk, head is tilted to right, and paper is on a right-to-left slant.

G. Experience
The combination of the perceptual motor-curriculum and the Handwriting With Write and See program did seem effective in producing the terminal behaviors sought.

III. Spelling

A. Terminal Behavior Sought
Minimum Performance: The child will be able to write without error both in lists and in context the 310 words of the Dolch lists.
Maximum Performance: The child will be able to write without error both in lists and in context all the words contained in the adopted spelling series of the school from grade where a child of chronological age would be placed.
Application Performance: In any written performance, the child will be able to spell correctly those words he has learned.

B. At this time no formal instructional program has been formulated. Because of the low levels of oral language and reading possessed by the children selected for the non-graded classes, it seemed better to concentrate on their development of language and reading skills.
Distar Reading involves consistent instruction in "spelling" sounds. Some incidental learning of words occurs in copying stories from the blackboard. For more advanced children, spelling lists from the adopted spelling series have been used.

Perceptual-Motor Curriculum

I. Introduction

Of the 75 children selected for the non-graded classes in Monroe County, 73 children indicated inadequate visual-motor development and mixed laterality. The aforestated condition was found with high enough frequency that it appears to be a distinguishing

characteristic of learning disabled children no matter what the I. Q. is. A variety of visual, auditory and speech disorders accompanied the universal condition.

The perceptual-motor curriculum was developed on the assumption that the accompanying auditory and visual perception disorders were due primarily to the lack of "neurological organization." The lack of "neurological organization" was demonstrated by the following characteristics: (1) inadequate mobility patterns, (2) inadequate visual pursuit ability, and (3) mixed laterality. Another assumption that was made was that improvement in neurological organization could be brought about by teaching child correct patterns of movement and improving his visual pursuit abilities.

Therefore, the perceptual motor curriculum was developed in three phases - from baseline exercises to improve neurological organization to exercises designed to improve fine motor coordination and eye-hand coordination. The three phases were:

1. Mobility Pursuit Exercises
2. "Perceptual-Development" Exercises
3. "Kephart-Frostig" Exercises

When all three phases have been developed, one hour of time per day is needed for the perceptual-motor activities. A description of each phase follows:

Phase I

A. Terminal Behaviors: The child will be able to perform easily and without aid the following:
   1. Move his limbs in an alternating fashion at any level of mobility.
   2. Follow a moving object within his control by moving just his eyes.
   3. Follow a moving object outside his control with just his eyes.
   4. Focus both eyes and see one object.
   5. Use right hand and right eye together for writing and drawing or use left hand and left eye together for writing and drawing.
   6. Identify rightness and leftness in the objective environment.

B. Materials Needed: None

C. Time Needed: 15 - 30 minutes a day

D. Space Needed: Open space 12 - 15 feet long

E. Activities for Developing: Mobility-Visual Pursuit Exercises (See attachment for complete description)

   The following is a daily schedule of the exercises listed in the order that they are done:
   1. Cross-pattern crawling on stomach - 6 times
   2. Cross-pattern crawling on hand and knees - 10 times
   3. Cross-pattern walking - 10 times
   4. Visual Pursuit with object held by child - 5 times each pattern
   5. Visual Pursuit with object held by teacher - 5 times each pattern

Description of Individual Exercises

Cross-pattern crawling on stomach: The child is to lie flat on his stomach. Position the child as follows: (See diagram below)

1. Right arm stretched out in front.
2. Right leg stretched out behind.
3. Left leg is bent with toe of left foot arched to push against floor.
4. Left arm lies back across the left leg.
5. Head is turned to the left, facing the left side of the room.

Diagram 1

The child then pushes with left toe and foot and pulls with the right hand, straightening out his body as he does. Then he shifts positions as shown in diagram 2.

1. Left arm is stretched out front.
2. Left leg is stretched out behind.
3. Head is turned toward right wall.
4. Right leg is bent with toe on right foot arched to push.
5. Right arm lies back across right leg.

The child continues to shift and move until he has made the required number of trips.

Diagram 2

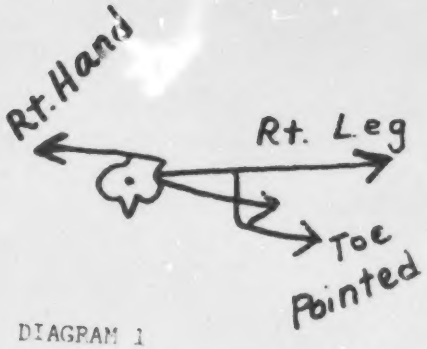


DIAGRAM 1

DIAGRAM 2

DIRECTIONS FOR ADMINISTERING NEUROLOGICAL ORGANIZATION TEST

by Dr. James I. Califf

Checking Pons

I. Crawling on Stomach:

Ask the child to lie down on the floor on his stomach facing you.
Then ask the child to crawl. If he attempts to get up on his hands and knees, ask him to get back on his stomach and crawl.

Possible Responses:

____1. Child cannot move.
____2. Child sticks out hands and arms, pulls with hands or elbows and drags legs behind him. (Homologous or no pattern)
____3. Child bends elbow and leg on same side of body, moves, and then switches to the elbow and leg on the other side of the body. (Homolateral pattern)
____4. Child bends elbow and leg on opposite sides of body, moves, and then switches to opposite elbow and leg. (Cross-pattern)

Checking Midbrain

I. Crawling on Hands and Knees (Creeping)

Ask the child to get up on his hands and knees and crawl, you may have to demonstrate for some children. Have him repeat several times while you observe the movement of his hands and knees.

Possible Responses:

____1. Child bunny hops across room. (Homologous pattern)
____2. Child moves left arm and left knee and then right arm and right knee or vice-versa
____3. Child moves right arm and left knee and then left arm and right knee or vice-versa (Cross-pattern)
____4. A mixture of the above two depending on the speed of movement.

II. Visual Pursuit:

Ask the child to stand up straight.
Tell him to extend the arm he uses for writing and make a fist of his hands.
Put pencil, point up, in clenched fist.
Cup your hand over the child's.
Tell him to keep his eyes on the end of the pencil while you move his hand. Tell him to move just the eyes and not the head.
Move the child's hand through the four planes as described for you in the exercise sheets.
Watch his eyes closely.

Possible Responses:

____1. Pass. Child can follow pencil without head movement and without losing pencil point. Eyes move smoothly in all directions.

____2. Rough. Child can follow pencil with some head movement and without losing pencil point. One or both eyes move haltingly and with some difficulty.

____3. Fail. Child moves head instead of eyes. Child loses target consistently. On circular movement, one eye fails to make 360 degree turn. On diagonal movement, eye stair-steps down or does not move on diagonal line but seems to slip down.

III. Binocularity:

Requires use of Tests 1 - 4, 10 - 11 on Telebinocular or equivalent vision tester. Most of you will not have access to Telebinocular. You can observe, however, to see if child has an eye that turns out or one that turns in. If either condition exists, binocularity is probably lacking.

Checking Cortex

I. Walking

Set up chairs on both ends of the room. Ask the child to walk up and down five times, stepping up on the chair as he reaches each end. Tell the child to walk as he usually does. Watch to see if he moves the opposite arm and leg together. Also watch to see which foot he uses for stepping up on chair.

Possible Responses:

____1. Child does not swing arms but holds them primarily in the balance role (No pattern)

____2. Child moves arm and leg on the same side of the body (Homolateral)

____3. Child moves arm and leg on opposite sides of the body as he walks. Arms swing in rhythm with leg movements. (Cross-pattern)

II. Visual Pursuit:

Repeat the 4 tests as described in midbrain section. You stand about 6 feet from child, hold the pencil in your outstretched arm-hand. Tell the child to follow the point of on the pencil while you move it. Tell him to move just his eyes and not his head. Watch the eyes closely as he attempts to follow. Performance is judged in the same manner as for midbrain tests.

III. Depth Perception

This is checked by Test 7 of Telebinocular or an equivalent vision tester.

Checking Laterality

(Cerebral Hemispheric Dominance)

I. Handedness

1. You will already have noted the hand which the child uses for writing.
2. Have him throw the ball to you several times and note which hand he uses.

3. Ask him which hand he uses when picking up fork to eat, glass to drink, brush teeth, cut with scissors.

II. Footedness

1. You will already have determined foot used when stepping up.
2. Ask him to kick the ball to you several times. Note which foot he uses for kicking. Ask him if he ever uses the other foot and how well he does with it.

III. Eyedness

There are three kinds of eyedness: sighting, functional, and controlling eyedness.

A. Test for Sighting Eye

1. Have child stand upright about six feet from you. Tell him to stick out his arm and hand and sight down his finger at the pencil you hold. Demonstrate if necessary. Tell him to keep both eyes open. When you think that the child has his eye, finger, and pencil aligned, ask him to close the eye he is not using. The open eye is the sighting eye. (If the child closes both eyes, he is indicating a neurological difficulty.)
2. Give the child a tube. Tell him to hold the tube in both hands. Tell him you are going to hide the pencil behind your back and when you bring it out, he is to bring the tube to his eye and look through it at the pencil. Demonstrate if necessary. Repeat the pencil hiding-showing several times. Make sure it is held to far right, far left, and in middle to see if he changes the sighting eye as the pencil position changes.
3. Give him a paper with a small hole in center. (The paper may be prepared by folding it first in half, then folding the halves, and then tearing a small hole directly at center of folds.)
   Tell him to hold the paper in both hands and at stomach height. Tell him you are going to hide the pencil behind your back. Tell him when you bring it out that he is to bring the hole in the paper all the way over to his eye and see if he can see the pencil through the hole. Repeat pencil hiding-showing several times. Make sure it is held to far right, far left and in middle to see if he changes sighting eye as the pencil position changes.

B. Testing for Functional Eye

Ask the child to sit down at a desk as he usually does when he writes. Give him pencil and paper and ask him to write this sentence: My name is_____.

Possible Responses:

_____1. Right-eye, right-hand work together, child will place paper on a diagonal from left to right. Head will be 1/2 arm's length from paper. Head will tilt slightly to left. Body will be at an angle 15 - 30 degrees to table.

_____2. Left-eye, right-hand work together. Child turns paper sideways or is placed to far right. Head either goes in very close to paper or tilts to right instead of left. Child will sit at 90 degree angle to table. N in name is usually capitalized. Sentence curves upward or downward on unlined paper. Pencil will be gripped very tightly; hand sometimes curves around like some left-handed youngsters write.

_____3. Mixed - Child exhibits some of traits in both 1 & 2 above.

____4. Left-hand, left-eye work together. Child will place paper on diagonal from right to left. Head will be about 1/2 arm's length from paper and tilted to right. Body will be at 15 - 30 degree angle to table.

____5. Right-eye, left-hand work together. Child places paper on far left or turns it sideways. Head either goes in very close to paper or tilts to left. Writing curves upward or downward on unlined paper.

____6. Mixed - Child exhibits some of traits in both 4 & 5.

C. Testing for Controlling Eye

This is usually determined by whichever is best eye on Tests 5, 6, 13, 14 of Telebinocular. It can also be estimated by determining which is the better eye on the Snellen Chart Test.

MSCW READING CENTER
Columbus, Miss.

Neurological Organization Test
Individual Record Sheet

Dr. James I. Califf

Directions: This is an individual record sheet for each child administered the neurological organization test. It follows the organization for testing given in the accompanying Directions for Administering the Neurological Organization Test.

I.	Checking Pons: (Circle appropriate number of word to indicate results)			
	A. Crawling on Stomach	Inadequate 1 2 3	Satisfactory 4	
	B. Simultaneous Vision (Test 1-Telebinocular)	Failed	Retest	Satisfactory
II.	Checking Midbrain			
	A. Crawling on Hands & Knees	Inadequate 1 2 3	Satisfactory 4	
	B. Visual Pursuit (Check appropriate blank)	Pass	Rough	Fail
	1. Vertical	____	____	____
	2. Horizontal	____	____	____
	3. Circular	____	____	____
	4. Diagonal	____	____	____
	C. Binocularity (Use Telebinocular)	Pass	Rough	Fail
	Farpoint			
	2. Vertical Posture	____	____	____
	3. Lateral Posture	____	____	____
	4. Fusion	____	____	____
	Nearpoint			
	10. Lateral Posture	____	____	____
	11. Fusion	____	____	____
III.	Checking Cortex			
	A. Walking	Inadequate 1 2	Satisfactory 3	
	B. Visual Pursuit	Pass	Rough	Fail
	1. Vertical	____	____	____
	2. Horizontal	____	____	____
	3. Circular	____	____	____
	4. Diagonal	____	____	____
	C. Depth Perception (Telebinocular)	Pass	Fail	Retest
IV.	Checking Laterality	Right	Left	Mixed
	A. Handedness	____	____	____
	B. Footedness	____	____	____

C. Eyedness	Right	Left	Mixed
1. Sighting Eye			
a. Pointing with finger	____	____	____
b. Through tube	____	____	____
c. Through hole	____	____	____
2. Functional Eye	____	____	____
3. Controlling Eye			
a. Farpoint	____	____	____
b. Nearpoint	____	____	____

Summarizing Results:

1. Mobility was _____
_____
2. Visual Pursuit Ability was _____
_____
3. Visual Difficulties Noted were _____
_____
4. Child (is, is not) neurologically organized.

Using Results:

Prescribe exercises if:

1. Inadequate mobility at midbrain and/or cortex was noted.
2. Two or more or visual pursuit tests of midbrain and/or cortical levels noted.
3. Binocularity was lacking (failing fusion test plus failing tests 2, 3, or 11).
4. Mixed laterality was noted. (Disregard mixed controlling eye if all other tests are satisfactory.)

MSCW READING CENTER

Exercises to Improve Neurological Organization

The following is our schedule of exercises, designed by Dr. Carl Delacato, to improve the physiological readiness of your child for reading. The mobility patterns and visual pursuit patterns reinforce each other. Both are necessary parts of the exercise program. If you are not prepared to continue the program for at least a six-month period, read no further.

Phase I

The time spent with the exercises should be approximately 15 - 20 min. The exercise space should be from 12 to 15 feet long.

First: Cross-pattern crawling on stomach. ____ times.
Second: Cross-pattern crawling on hands and knees. ____times.
Third: Cross-pattern walking. ____ times.
Fourth: Visual Pursuits - While child holds object in his hand.
Fifth: Visual Pursuits - While someone else holds object to be followed.

Description of Individual Exercises:

A. Cross-pattern crawling on stomach: The child is to lay flat on his stomach. Position the child as follows: (See diagram below).
   a. Right arm stretched out in front.
   b. Right leg stretched out behind.
   c. Left leg is bent with toe of left foot arched to push against floor.
   d. Left arm lies back across the left leg.
   e. Head is turned to the left, facing the left side of the room.

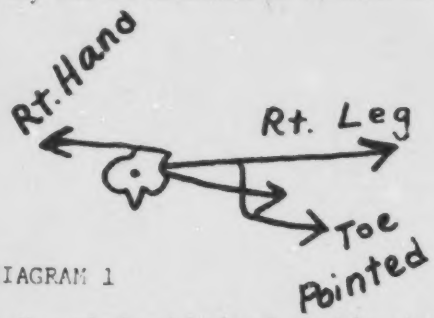


DIAGRAM 1

B. The child then pushes with left toe and foot and pulls with the right hand, straightening out his body as he does. Then he shifts positions as shown in Diagram 2.
   a. Left arm is stretched out front.
   b. Left leg is stretched out behind.
   c. Head is turned toward right wall.
   d. Right leg is bent with toe on right foot arched to push.
   e. Right arm lies back across right leg.

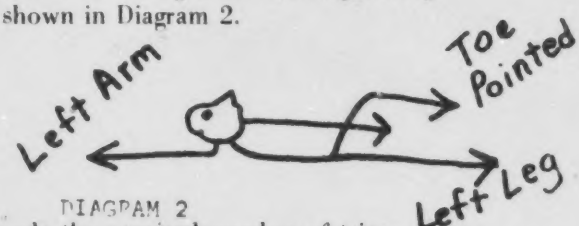


DIAGRAM 2

The child continues to shift and move until he has made the required number of trips.

C. Cross-pattern crawling on hands and knees: The child is to get up on his hands and knees. If right-handed, position him as follows: (If left-handed, reverse position) See Diagram 3.
   a. Right hand is foward with fingers together, hands flat and pointed straight ahead.
   b. Right knee is slightly behind the left knee.
   c. Right foot extends backwards with top of foot and toes flat on the floor.
   d. Left knee is forward.
   e. Left hand is placed directly in front of and touching left knee, fingers together and hand pointed straight ahead.
   f. Left foot extends backward with tip of foot and toes flat on the floor. (Do not let

child's toes curl under).

g. Head is turned slightly so that child can sight on the hand up front.

DIAGRAM 4 DIAGRAM 5

After the child is positioned properly, he then switches sides by moving the left hand and right knee at the same time and turning his head to look at the new hand up front. (See Diagram 4). He continues the "switch sides" until he has made the required trips up and down the exercise space.

During the first weeks of the program, the child should be carefully supervised by you. Watch for the following things:

a. Hands are kept flat and pointed straight ahead. Fingers are kept together.
b. The opposite hand and knee are moved each time.
c. The knees are lifted and feet are left in contact with the floor.
d. The child watches the hand up front and turns head in unison with the hand and knee movement.

When child can remember to do all the above things while moving, he has mastered the exercises. Practice at the mastery level produces the most improvement in neurological organization.

D. Cross-pattern walking: The child is in the standing position for this movement. To begin the exercise, position him as follows if he is right-handed, reverse if he is left-handed. (See Diagram 5).

a. Right foot is forward, turned slightly outward.
b. Left hand is extended in front of child with index finger pointing straight down and rest of fingers folded under.
c. Child turns head slightly, bends head slightly and sights down finger at big toe of right foot.
d. Left foot remains behind right, pointed straight ahead.
e. Left arm extends straight down and out to the side with index finger extended and other fingers folded under. (Do not let child put hand behind his back.)

The child then shifts sides by moving left foot forward in unison with the right arm and and hand and the head turns to sight down the finger at the big toe on the left foot. (See Diagram 6).

The child continues to "shift sides" until he has moved the required number of times up and down the exercise space. The speed of movement may be varied but a steady rhythm should be maintained. It is most important that you carefully supervise the first weeks of the exercise program. Make sure he does the following things:

DIAGRAM 6

DIAGRAM 5

a. Legs must not cross but move forward in parallel lines.
b. Right foot turns slightly outward, left foot goes straight ahead. (Reverse is true for left-handed child.)
c. Make certain that child rotates his head, neck, and eyes toward forward hand with each step.

F. Visual Pursuit While Child Holds Object: This set of exercises is the follow-through for the crawling on the hands and knees mobility exercise. Position the child as follows:
a. Child stands upright away from wall or supporting object.
b. Heels should touch with feet turned slightly outward.
c. Child holds object for pursuit firmly enclosed in his writing hand with arm fully outstretched.
d. You cup your hand over his.
e. Tell him to watch a point on the object while you move his hand.
f. Tell him to move just his eyes and not his head.
g. Move his hand through each of the following planes:

Vertical: Start with the object at nose height and directly in front of the nose. Move object as far upward as eye will go. Move the object back to the nose and stop. Move object as far downward as his eyes will travel and then back up to the nose and stop. (See Diagram 7).

Repeat movement 5 times.

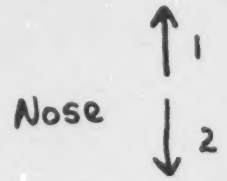


DIAGRAM 7

Horizontal: Start with object directly in front of nose. Move object as far to the right as eyes will move sideways, coming back on straight line to nose and stop. Move object as far to the left as the eyes will move sideways, coming back to nose and stop. (See Diagram 8). Repeat movement 5 times. If child is left-handed, make sure he holds the object in left hand and moves left first in exercises 2, 3, 4.

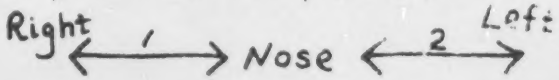
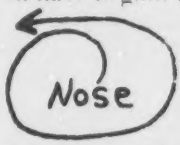


DIAGRAM 8

Circular: Begin at nose. Move object-hand up and over to the right, continuing the movements until you have made a circle five times. Make the circle go as far up and as far down as the eyes will travel. You do not have to stop once you have begun. (See Diagram 9).

DIAGRAM 9



Diagonal: Begin at the nose. Move object-hand to right in straight line as in horizontal movement. Then bring object-hand on a diagonal across chest to left pocket. Then move object-hand on a diagonal across the chest to left shoulder. Continue movements five times. (See Diagram 10).

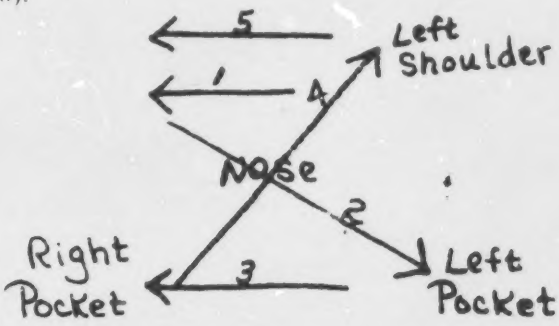


DIAGRAM 10

F. Visual Pursuit While You Hold The Object to be Pursued:

These exercises are the follow-through on cross-pattern walking.

The child stands upright, head perpendicular to shoulders, heels together with toes turned outward, and arms down by his side.

You stand during the first week at a distance of 8 feet with object enclosed in your fist and arm stretched outward.

Tell the child to follow some point on the object with his eyes and not his head.

As explained in 4, repeat movements through the four planes. Each movement is done five times.

Each week move in a little closer until you have reached a point of 2 feet from the nose. Do Not move closer than 2 feet.

Things to watch for in Visual Pursuit Exercises:

a. Make sure his head does not tilt sideways but is held perpendicular to the shoulders.
b. On the vertical pursuits, the object should remain in the middle of the face. Displacement to the right or left will cause improper movement of the eye.
c. Move object at moderate speed. If child loses object, stop and let him catch up with it. Do not let him lag behind or get ahead of the object.
d. If he has trouble keeping his head still, let him use the wall for support for a week, then move him away from the wall.

1. Try to have a consistent time for doing the exercises. If done right before bedtime, the exercises may wake the child up.
2. No child is too old to be read to. You might have the child select a book he would like for you to read to him while he is doing his mobility patterns.
3. For the first two months, the exercises should be done seven days a week. After that time, the week-end exercises can be suspended when other activities interfere. In the summer, two sessions a day will help speed up the process.
4. Keep stressing to the child the necessity for doing the exercises well. Practice at the mastery level achieves the results we are seeking.
5. Teach the child to correct his own performance by asking him what he is doing wrong if he is making a mistake. Never spank the child for not wanting to do the exercises.

General Procedures

1. Children were taught exercises one at a time, covering a 3-week period.
2. Teacher aide worked individually with children who had difficulty.
3. After 3 weeks, entire sequence of exercises were maintained five days a week.
4. Teacher and aide wore slacks in order to redemonstrate mobility patterns to individual children.
5. Teacher used counters and blackboard marking system to help children keep up with number of times each exercise had been done.
6. Children were scheduled in two groups, one group worked on other phase of perceptual-motor curriculum while one group did mobility-visual pursuit exercise. Children were grouped according to ability.

Phase II

A. Terminal Behaviors: The child will be able to perform easily and without aid of the following behaviors.
   1. Walk a 2-inch walking board forwards, sideways and backwards without losing his balance.
   2. Walk a 2-inch walking board with object balanced on head and eyes focused on a far-point target.
   3. Touch with his finger a swinging ball at the same juncture each time.
   4. Maintain his balance on two types of balance boards for a period of one-half minute while playing bean-bag catch.

B. Materials Needed:

	Cost
Two Minimum Motor-Perception Development Sets	$116.00
Two 6' Trampoline Boards	
Two Syspendable Balls	
Six Bean Bags	
Two Visual-Motor Control Sticks	
Two Walking Boards	
Two Walking Beams with Supports	
Two Rocking Boards	
Two Balance Boards	
No. 1WO No. 11A Handbooks	

Secured From: Perceptual Development Associates, Inc.
P. O. Box 936
La Porte, Texas 77571

C. General Procedures:

1. Teacher demonstrated activities for each of five types of activities to be done with this equipment. The following activities were involved:
   - 84 Walking Board Activities
   - 27 Jumping Board Activities
   - 18 Rocking and Balance Activities
   - 22 Bean Bag Activities
   - 42 Suspendable Ball Activities
2. Children were allowed to practice the activities until they had mastered them. They were given work cards (4 x 6) with the week's activities listed on them.
3. The teacher and the teacher aide checked each child. If he performed the activity without error three times straight, he was allowed to check the exercise off.
4. The teacher kept a record of progress for each activity. (See Table B, page 84).
5. After all activities were completed, the children continued periodic practice to maintain skills.

Phase III

A. Terminal Behaviors Sought:

The child will be able to perform easily and without aid the following exercises:

1. Cross the midline of his body by switching eye-hand control in bilateral tasks.
2. Match rhythms by producing same rhythm he heard.
3. Trace between 2 lines without touching either line.
4. Trace over line without getting off line.
5. Distinguish foreground objects within maze of background details.
6. Recognize any geometric form regardless of size or placement within an environment.
7. Match without error like objects, geometric forms, letters, words, and numbers.
8. Draw designs that match a standard design that is kept in view.
9. Convert visual memory of geometric forms to free-hand drawing of form.

B. Materials Needed:

		Cost
The Slow Learner	Newell Kephart	$ 8.00
Frostig Visual Perception Exercises		
a. 359 ditto sheets		
b. Manual of Instruction		98.00

Secure From: Follett Publishing Company
1010 W. Washington Blvd.
Chicago, Illinois 60607

C. General Procedures:

1. Incorporate as part of 1 hour-a-day program by having teacher aide work with one group while other group works on phase I & II exercises.
2. Use blackboard exercises from Slow Learner (see pp. 161-215) until mastery.
   a. Clock Game
   b. Circle Drawing
   c. Geometric Form Templates
3. Use Frostig exercises in order prescribed on programming sheet included with ditto masters.

D. Experience With Perceptual-Motor Curriculum In Title III ESEA Project Monroe County

Terminal behaviors were achieved. Noticeable improvements in handwriting visual functioning and physical development were noted.

TABLE B

NAME	SUSP. BALL	WALKING BOARD	BALANCE & ROCKING B.	JUMPING BOARD	BE AC
Wayne Allen	1-12	1-28	1-12	1-11	
Phillip Dean	1-12	1-18	1-12	1-9	
Robert Hacker	1-12	1-21	1-10	1-9	
Donald Jones	1-12	1-20	1-12	1-9	
Donald Langston	1-12	1-16	1-12	1-11	
Johnny Ross	1-12	1-18	1-12	1-11	
Gary Ruth	1-9, 12	1-18	1-6	1-5	
Johnny Stoddard	1-8, 12	1-12	1-10	1-8	
Jerry West	1-9, 12	1-18	1-12	1-11	
Ricky West	1-8, 12	1-18	1-12	1-11	
Jim Willis	1-8, 9 , 12	1-21	1-6	1-5	

TABLE B

SUSP. BALL	WALKING BOARD	BALANCE & ROCKING B.	JUMPING BOARD	BEAN BAG ACTIVITIES
1-12	1-28	1-12	1-11	1-5
1-12	1-18	1-12	1-9	1-5
1-12	1-21	1-10	1-9	1-5
1-12	1-20	1-12	1-9	1-5
1-12	1-16	1-12	1-11	1-5
1-12	1-18	1-12	1-11	1-5
1-9, 12	1-18	1-6	1-5	1-5
1-8, 12	1-12	1-10	1-8	1-5
1-9, 12	1-18	1-12	1-11	1-5
1-8, 12	1-18	1-12	1-11	1-5
1-8, 9 , 12	1-21	1-6	1-5	1-5

CHAPTER V

THE PROJECT MODEL

V. Project Staff

1. Job Descriptions

a. Project Director. The project director is responsible to the superintendent of the school district (Aberdeen Municipal Separate School District) for the operation of the project according to the approved project proposal. He is also responsible for the supervision of all staff personnel in cooperation with the school principals. The supervisory function is primarily as a Consultant and is consistent with the policies of the respective school districts.

b. Psychological Consultant. The duties of the psychological consultant are: administer and evaluate the psychological instruments named in the project proposal as elements of diagnostic program; provide psychological services to instructional specialists and hold conferences with instructional specialists.

c. Medical Consultant. The medical consultant is responsible for a complete medical exam for each pupil and for obtaining laboratory tests as needed. Medical referral of pupils to specialists such as a pediatric neurologist is made by the medical consultant.

d. Perceptual-Motor Consultant. The perceptual-motor consultant is responsible for the design of the perceptual-motor training program, training of instructional specialists and aides, identification of materials and equipment, supervision of the perceptual-motor training program, and supervision of the total instructional program at one or more training centers.

e. Social Worker. The social worker is to complete a case history for each pupil. This requires a home visit with the parents or gaurdian of each pupil. Appointments and transportation for special services (medical, psychological, audiometric, etc.) are coordinated through the office of the social worker. Casework services are provided to: interpret the project objectives to the pupil's family, develop close cooperation between instruction specialists and parents and to deliver social services to pupils. A written record of all social services is to be sent to the project director and to the social worker's supervisor by the social worker.

f. Instructional Specialist. The instructional specialist is a certified special education teacher and is responsible for the implementation of the experimental program of instruction. Certain records (pupil progress, test results, etc.) are to be kept by the instructional specialist. The instructional specialist is to administer certain tests in the sequence consistent with the design of project evaluation.

g. Instructional Aide. The instructional aide is responsible to the instructional specialist for carrying out specifically assigned instructional tasks. Carefully defined and highly structured instructional programs do not permit the aide to make educational decisions normally ascribed to certified personnel.

h. Instruction Supervisor. The instruction supervisor is responsible for monitoring classroom performance of the instruction specialists and the aides in selected schools and for the determination of any needed in-service training.

i. Language Development Specialist. The language development specialist is responsible for speech, hearing and language evaluation. She conducts the language development program under the direction of the speech and hearing consultant.

j. Speech and Hearing Consultant. The speech and hearing consultant supervises and recommends strategies for the language development specialist.

2. Personnel Training

Even though the instructional specialists are certified special education teachers the nature of the experimental instructional program required additional training. Thus instructional specialists received initial training during the summer (1969) preceeding the operational date (September, 1969) of the program.

The addition and replacement of staff indicated a need for additional staff training. Project consultants were convinced that the training would be relevant if the trainees could practice newly learned skills with the pupils they would be instructing. The need for an extended school year for the project pupils influenced the decision to provide instruction for six weeks during the summer. A copy of the training schedule for the summer of 1970 is shown on page 87.

3. Monitoring Performance

The experimental design of the curriculum focused on the development of a highly structured instructional program. Monitoring of the performance of instructional specialists and instructional aides was deemed critical to the success of the project. Consultants, the project director, and the instruction supervisor provided monitoring services through regular on-site visits, individual conferences and staff development meetings. Monitoring was also provided through the summer in-service workshops. A vital monitoring service was provided by the on-site visitations of the Title III Evaluation Committee and the Title III Supervisor of the State Department of Education.

B. The Children

1. Referral

Children considered as prospects for project classes were referred by regular classroom teachers and school principals.

2. Screening

All children referred were screened by project consultants and project teachers using:

a. Keystone Visual Survey Test
b. Goodenough Intelligence Test
c. Perceptual-Motor evaluation
d. Slosson Individual Intelligence Test
e. Distar Reading Placement Test
f. Silvaroli Reading Test
g. SORT Word Recognition Test
h. Personal data sheet
i. Teacher's narrative

3. Selection

Children identified as prospects for project classes by the screening procedures were given an additional diagnostic evaluation by (a) the medical consultant, Dr. Marion Godby, Director of the Monroe County Health Department, (b) the project psychologists, Dr. James Wilson and James Woolington of Mississippi State University, (c) the speech and hearing consultant, Dr. Elizabeth Hawk of Mississippi State College for Women.

a. Diagnostic Instruments
   (1) Psychological evaluation
      (a) Illinois Test of Psycholinguistic Abilities
      (b) Bender-Gestalt
      (c) Wechsler Intelligence Scale for Children
   (2) Medical evaluation - complete physical examination
   (3) Speech and Hearing evaluation
      (a) Audiological examination

CALENDAR OF IN-SERVICE TRAINING FOR CURRENTLY EMPLOYED TEACHERS AND NEW TEACHERS

In Aberdeen Title III Project

The classes in Amory and Aberdeen will offer a summer program for all pupils enrolled in the project. Experienced teachers and aides will conduct the summer classes Monday through Friday from 8:30 a.m. to 11:30 a.m. beginning June 15, 1970, and ending August 7, 1970. New teachers will observe and assist in these classes in the morning.
The afternoon in-service training session for new teachers and teachers now employed in the project will be conducted from 1 p.m. to 4 p.m. approximately. Teaching aides will not be required to attend the in-service training sessions.

June 15-19
Topics: Distar for new teachers and for currently employed teachers. Diagnostic procedures (neurological organization, Telebinocular, etc.) will be taught for new teachers.
Instructors: Diagnostic Procedures - Dr. Califf, SRA Distar Consultant

June 22-26
Topics: Social studies programming for new and currently employed teachers -- Our Working World, Science Research Associates.
Instructor: SRA Consultant

June 29-July 3
Topics: Math programming, Cuisenaire Instructional Materials, for new and currently employed teachers -- also to be included, math games and puzzle enrichment activities.
Instructor: Dr. Hunt

July 6-10
Topics: Behavior modification rationale and techniques, unit planning, model for individual instruction for new and currently employed teachers.
Instructor: Mrs. Evelyn Califf

July 13-31
Topics: AAAS Science programming for new and currently employed teachers. (3 weeks)

August 3-7
Topic: Screening of new pupils by teachers.

(b) Articulation test
(c) Therapy plan

b. Classification According to Primary Handicap

Teacher	Emotionally Disturbed	Brain Injured	EMR	L.D.	Cerebral Palsied	Hearing Impaired	Physically Handicapped
Young	1	1	7	2	1	1	0
Jernigan	0	1	8	2	0	0	1
Moak	0	0	6	7	0	0	0
Bourland	0	0	6	7	0	0	0
Waldrop	0	0	3	9	0	0	0
Frye	0	0	8	4	0	0	0
Totals	1	2	38	31	1	1	1

C. The Parents

1. Parental Approval of Placement

A form "Request for Placement of Pupils in the Experimental Non-Graded Class" was signed by parents as a requirement for children to be assigned to a project class. Parents were given the opportunity to approve or disapprove placement only after interpretation of results of the comprehensive diagnostic evaluation and interpretation of the project model.

2. Interpretation of the Project

Results of the comprehensive diagnostic evaluation was communicated to parents by instructional specialists and/or project consultants. Interpretation of the project was made to parents in small group meetings. Additional interpretation of the project was done by the social workers.

3. Reporting Pupil Progress

Soon after the project became operational it was quite evident that the traditional reporting systems used by participating schools were not consistent with the objectives of the project. Project consultants and instructional specialists devised a simple reporting procedure. Specific skills mastered by each pupil were reported in behavioral terms at the regular six week reporting period. For example, "John can add two digit numbers involving regrouping."

Standardized achievement tests administered as part of the schools' regular testing programs were administered to further assess school achievement.

CHAPTER VI

SUMMARY OF SERVICES PROVIDED BY THE PROJECT

While an analysis of test data reveals progress made by pupils included in the project, an evaluation given by certain professionals involved in the project should give additional information about the project. A summary of services and evaluation given by the medical consultant, speech and hearing consultant, social worker, psychological consultant and by the building principals is presented next.

A. Medical Consultant's Evaluation of Value of Medical Services to Pupils

1. Physical - The physical examinations have frequently detected physical defects that needed correction. The correction of the defects found has been slowed by the delay of the reporting of these findings and the carrying out of the service which requires parental consent and transportation for appointments.
2. Social - The social worker needs a part time aide for transportation of children for medical services. We feel that an excellent program is being carried on by the present social workers which is enhanced by background information on patients available in connection with the Welfare Department.
3. Psychological - Not qualified to evaluate because of inadequate information by medical consultant.

Medical consultant's evaluation of project medical services to County Health Department:

This program has brought to the attention of the Health Department children who needed Health Department services who would not have otherwise been found.

Medical consultant's recommendation for improvement of project medical services:

Earlier scheduling of appointments for physical examinations and the assistance of the recommended aide for follow-up of the recommendations. This would involve return of the children to the Health Department for immunizations, specimens, and tests as well as dental appointments and physical appointments. Scheduling of all of the services to these children would no doubt improve the project.

Submitted by:

Marian W. Godbey, M.D.
Health Officer
Monroe County Health Department
Aberdeen, Mississippi

B. Social Worker's Evaluation and Summary of Social Work Services Provided by Title III Social Workers, November 15, 1969 - May 31, 1971 – Monroe County

1. Previous to the beginning of the Title III Project, the social service relationship to the school was one of meeting emergency needs of children. For example, children were often referred for services due to neglect or physical abuse but rarely for any other problem.

   In the Title III Program, intensified social services are provided. In place of this negative approach mentioned above, a positive approach is taken whereby preventive social work techniques are utilized.

2. Objectives of Social Work Services
   a. Provide any social services necessary to better enable the child to benefit fully from the educational program provided.
   b. Assist in locating and referring children with learning problems to the Title III Consultants for screening.
   c. To interpret the Title III Program to parents and community.
3. List of services provided by social workers to Title III project
   a. Serve as a liaison between school and parents.
   b. Interpret child's problems to parents and assist them in dealing with said problem.
   c. Accept referrals of medical needs from teachers or principal and utilize community resources in metting these needs.
   d. Interpret specific medical problems to parents and request their cooperation to help carry out prescribed treatment.
   e. Follow-up on child who is absent two days and ascertain reason for his or her absence from school.
   f. Give family planning services if needed.
   g. Serve as member of project team.
   h. Interpret child's home environment to the teacher to create a better understanding of child's needs.
   i. Complete confidential case history of each child.
   j. Discuss with parents techniques of Behavior Modification used by teachers in classroom. Help and encourage parents to use these same techniques in the home.
4. Procedures used by Social Workers in Delivery of Services
   Social work services are provided through home visits, consultation with teachers, principals, medical personnel and project consultants. Appointments are arranged and transportation provided to meet each child's medical needs.
   An added procedure is visiting the home to determine parents' ability to pay for needed medical attention. If parents are unable to finance medical needs other financial resources are sought.
5. Record Keeping Procedures Used By Social Worker
   a. Case record is opened on each family with child in project.
   b. Narrative recordings and other correspondence is done on all action carried out by social worker. Copies are routed to project director and principal and original remains in permanent record.
6. Social Services Provided Through 2 - 01 - 71

No. of times service provided	Home Visits	Total Contacts in Person	Contacts by Mail	Contacts by Phone
1063	432	810	98	253

7. Social Worker's Evaluation of Value, if any, of Project Social Services to Pupils.
   a. Social. Because of casework services provided, the pupils will better be able to develop relationships with their parents, teachers, and peers. For example, when anti-social behavior is lessened, the tendency to be rejected is lessened.
   b. Psychological. Child's self-image is strengthened as a result of project social service. This is mainly done through interpretation of child's problems and project's program to parents thus helping them to develop a new attitude toward their child.
   c. Academic. By helping alleviate stress in the home and physical make-up, child is better able to profit academically.

d. Physical. Identifying health problems that otherwise might be overlooked, and obtaining needed medical attention.

8. Social Worker's Evaluation of Values, if any, of Project Services to County Welfare Department
   a. Helps agency identify families who need services of department but otherwise would not have come to the department's attention.
   b. Helps the community and school personnel become more aware of the services provided by the agency.
   c. Social workers' services reach more families on a wider range of economic levels.
9. Social Worker's Evaluation of Value, if any, of Project Social Services to Public Schools.
   a. Early identification and referral of children with problems. This is a preventive type casework.
   b. Social workers' relationship with the school creates a better image of Family and Children's Services to those associated with the school.
   c. Helps the school interpret social workers' services to the community.
10. Social Worker's Recommendations for Improved Project Social Services
   a. A local coordinator responsible for the smooth operation of the total project. This person could improve communication among project staff and avoid the time loss in getting approval for certain services.
   b. More classes are needed in order to meet the needs of the county. Since this project has been established, the department (Public Welfare Department) has had six different requests to place children with learning problems in Monroe County Foster Homes so that they would have the advantage of the Title III Class.
   c. Social workers spend much valuable time transporting children to doctors and medical complexes for diagnosis or treatment. If a transportation person were included to fill this need, other casework services could be provided to Title III families. For example, in cases where teachers are using Behavior Modification in the classroom, it is best to train parents to follow through with the same pattern in the home. Much time is required in providing this service.
   d. Social worker services could be carried out better to Title III children if more funds were available to meet medical needs.

C. Psychological Consultant's Evaluation of Title III Project - Monroe County

The writer's evaluation of the psychological services of the Monroe County Title III Project are written from the viewpoint of a psychologist. However, when determining the value of psychological services rendered in the project it is difficult to determine what aspects of the project have been directly influenced by psychological services. It is the writer's belief that the children enrolled in the project have been affected, psychologically, by the total program of which psychological services are only a part.

The major psychological service rendered in the Monroe County Title III Project has been psychological test administration and interpretation. Consultation services have been provided to teachers in conjunction with psychological test interpretation.

The number of psychological tests which have been administered are presented in Table I. (See page 92.)

Consultation with teachers in the project probably accounted for three days in each year of the project, 1969, 1970, and 1971.

The learners enrolled in the special program of the Monroe County, Title III Project, have undergone positive changes in socialization. At the beginning of the project many of the participants were shy, timid, and somewhat withdrawn. They were content, or preferred, to be a part of larger groups. When placed in one to one encounters with teachers and other

TABLE I

Tests Administered

Year	Wechsler Intelligence Scale for children	Illinois Test of Psycholinguistic Abilities	Bender Visual Motor Gestalt
1969	31	32	0
1970	25	37	3
1971	73	65	0
	129	134	3

professional personnel, many seemed to feel socially inadequate and incompetent. They avoided putting their academic and social skills on display in front of their peers.

Positive changes took place in social and psychological development as the children in the project began to acquire academic skills. Also, the acceptance of the children by teachers and project personnel seemed to cause the children to feel more secure; thereby causing an increase in their willingness to venture forth in social situations with peers and project personnel.

Psychologically, many of the learners demonstrated positive growth as they continued in the project. Some of the psychological changes observed are related to social and academic changes. One of the major values of the project from a psychological point of view is improvement of self-concept. The differential effects of increased academic achievement and psychological services upon positive changes in self-concept are impossible to assess.

Changes in the academic achievement status of the learners in the project are more readily measured than social and psychological changes. The academic services have been the major service rendered, and therefore, probably have been of more value to the project than any other singular service. However, since psychological and social aspects are intricately related to academic services, the writer feels that the value of the three services must be collectively considered.

The value of psychological services to the school can be assessed only to the degree that school personnel have utilized the services as determined by their behavior in relation to pupils in the school. I feel that many teachers and administrators have become more aware of the psychological needs of pupils as a result of talking with various project personnel, especially the project classroom teachers. Some school administrators have sought to find help for understanding the behavior of pupils not enrolled in the project. Evidently, these persons have perceived the psychological services as being of value to learners enrolled in the special project.

I feel that some of the teachers in the schools have a more positive regard for psychological and other services of the project as a result of the alleviation and remediation of various

problems of some of the pupils enrolled in the project. Some teachers had previously taught the pupils enrolled in the project and they possessed knowledge regarding pre-project behavior.

The main emphasis of the psychological services has been the administration and interpretation of specialized tests administered to each child individually. The administration of individual tests is time consuming, but important. Each child enrolled in the project was administered several tests, thus many days were spent in test administration.

The psychological consultant/consultants should be available more often to consult with teachers regarding the problems of pupils and teachers.

Some of the teachers in the project did not fully utilize the results of psychological tests. In some cases I do not believe that all teachers fully understood the nature of the tests and how the results could effectively be used. This weakness could probably be alleviated by group in-service sessions between the psychological consultant and the teachers.

D. Principal's Evaluation of Title III Project

1. The children were placed in regular classroom, subjected to the same routine as others with a very small amount of time for individual attention.
2. Objectives of the program, as I understand, are to help the underachievers make progress by giving them special help, giving exercises to develop them neurologically, and providing them with physical health services.
3. The experimental classes offer early diagnosis of troubles and design individual and group instructional activities to help the handicapped child. They follow a very careful plan to develop sequential skills.
4. I asked the teachers of the previous year to give the names of students who were having difficulty in regular classroom work. I gave the cumulative folders to the experimental teachers and the college advisors who did the screening.
5. After the children were selected, I contacted each parent, explaining the advantages. Later, we had a joint meeting with parents, teachers, and advisors. The program was explained and questions were encouraged.
6. Instead of a formal report card, a letter of progress report is being used.
7. The children were hard to control on the campus. They now play better, and have better behavior in the lunch room. Tests show that they are achieving academically.
8. Recommendations:
   a. With a full time aide the classes could be extended to 15 students.
   b. Some of these students will be going into this program in September for the third year. This limits the benefits for others who might profit from the class.

Submitted by:

(Mrs.) Lillian Bourland, Principal
Aberdeen Elementary School

E. Principal's Evaluation of Title III Project

1. Introduction:
   The Title III Project is housed in the Aberdeen Elementary School in regular primary classrooms. In each class there are 12 students, a teacher, and an aide. No special programming was available prior to implementation of the project.
2. Objectives:
   The classes are set up for the purpose of correcting learning disabilities of young children who are not performing satisfactorily in the classroom. This is not a program for mentally retarded or physically handicapped children as we think of Special Education.

3. The project provides comprehensive diagnosis and correction in these areas:
   a. medical
   b. psychological
   c. perceptual-motor
   d. speech
   e. educational
   f. audio
4. Screening is recommended upon referral by classroom teacher. Most of the students have had a year's experience in regular classroom.
5. To obtain parental approval, the school sends an application blank with instructions for conference, if desired. Staff members of the project are available, if needed, for further explanation.
6. Evaluation of student progress:
   a. Social - Behavior continues to be a problem.
   b. Psychological - Self concept has altered for some. Tend toward desire for achievement.
   c. Academic - Special curriculum and small enrollment tend toward greater academic progress. Continuous testing shows marked improvement.
   d. Physical - Deficiencies have been corrected.
7. Value to the school - Most children who showed so little progress are being reached now.
8. I think the project has been of great value to the children in it. It has also relieved the overcrowded conditions in some of the other classrooms.
9. I think the project could be greatly improved by extending the age group.

Submitted by:

(Mrs.) L. L. Adair
Elementary Principal
Hamilton Elementary School

CHAPTER VII

ANALYSIS OF TEST DATA

Monroe County Title III Project

In the tables which follow, an attempt has been made to show the changes which occurred in the test scores of the pupils enrolled in the Monroe County Title III Project. Scores of all pupils who are enrolled, or have been enrolled, in the project are not included in the tables. Some children dropped out of the project before follow-up tests were administered. Some children were not administered the same test on two different occasions because a substitute test was used. (e.g. The Slosson Test score was used rather than the WISC Test score for several new pupils in the fall of 1970). In such cases the results are not reflected in the accompanying tables.

TABLE II

Mean Gain in Wechsler Intelligence Test Scores

School	N	Verbal IQ	Performance IQ	Full Scale IQ	[illegible]
Aberdeen	12	1.58	9.00	5.66	10.3
Amory	15	-2.06	4.80	1.46	13.6
Hamilton	24	2.26	15.48	10.29	6.0

Tests of significance were not applied to the above results. However, it seems that any gain in an IQ score of 5 points would constitute a true gain. Errors of measurement are reflected in scores earned by individual pupils, but when the difference in test scores earned on different dates is averaged as has been done above, the errors of measurement are not of much consequence.

The average gain in the Performance IQ of the pupils in the Hamilton School are probably inflated due to practice effects. The lapsed time between testing dates was only 6 months which is less than recommended. Nevertheless, I do not believe that practice effects could account for all of the gain. Practice effects would not have as much bearing on the Verbal IQ as the Performance IQ. Since the Full Scale IQ is based on both Verbal and Performance IQ's, the caution regarding practice effects would be applicable.

Larger increases in Performance IQ than Verbal IQ is not surprising. The types of activities carried out in the classroom are probably reflected in the gains in Performance IQ. Many visual perceptual and motor activities are carried out with the pupils. These types of activities, as well as many others, are directly related to the Performance Scale of the WISC.

Tests of significance were not applied to the above test results. The pupils in the Hamilton School are not included in the above because follow-up testing with the Illinois Test of Psycholinguistic Abilities has not been completed. Results from Hamilton will be available March 29, 1971.

TABLE II

Mean Gain in Illinois Test of Psycholinguistic Abilities Scores

School	N	Gains in Months Psycholinguistic Age	Months in Which Gain Occurred
Aberdeen	22	6.77	10.3
Amory	15	4.00	13.0

The mean gains in test scores does not present a summary of the total picture of changes in test scores. Individual pupils made tremendous gains on either the Wechsler Intelligence Scale for Children or the Illinois Test of Psycholinguistic Abilities. Other pupils made little or no gain in test scores. Also, there are many sub-tests on both the WISC and ITPA. Changes occurred on the various sub-tests for different pupils.

There is a wealth of raw test data available on most pupils enrolled in the Title III Project of Monroe County. Factorial studies of the test results could provide the basis for research articles and theses.

GAINS IN PSYCHOLINGUISTIC AGE
MONROE COUNTY TITLE III PROJECT

School	N	Mean Gain PLA	Time in Which Gain Occurred
Hamilton	23	6.7 mos.	6.5 mos.

Tests of significance were not applied to the gain. Many of the 23 (one not included) children in the Hamilton School earned below average scores in intelligence and psycholinguistic abilities; therefore, the gain in PLA appears to be above expectations.

Evaluation of Reading Improvement

The California Reading Test (1963 edition) was selected as the criterion instrument for measuring gains in reading achievement. It meets most requirements for sound test construction and norming and is particularly suited to slow learners.

The Lower Primary Form (Grades 1 and Low 2) measures achievement in vocabulary and comprehension. The Upper Primary Form (Grades High 2, 3, and 4) measures achievement in vocabulary and three types of silent reading comprehension - - following directions, reference skills, and interpretation. The three main interpretation skills are reading for details, getting main ideas, and making inferences.

Table I shows results after one year of instruction in non-graded class I at Aberdeen. As can be seen, eight of twelve children were reading at pre-primer level or below (1.2 -- non-reader). All the children had been in school at least one year prior to testing in the non-graded class.

After five months in the non-graded class, eight of the children were making normal progress - one month's gain in achievement for one month's effort in school. Child nine in the table was in the program for the second year. He was a non-reader in September, 1969. He made only three months gain in achievement the entire first year, but has normalized this year.

Table II shows the results of fourteen months instruction in non-graded classes at Aberdeen. Eight of the eleven second-year children were non-readers in September, 1969. Children 1, 2, 3, 9, and 10 in Table II have averaged a year or better gain in achievement for each year in the class. Ten of the eleven children had hardly been able to take the Lower Primary Form of the California Reading Test in 1969. In January, 1971, they were able to be tested with the Upper Primary Form.

Child 5 in Table II developed seizures during the spring of the first year. He regressed in reading until they were brought under control. Child 11 in Table II still is undersize and underweight, a condition probably related to his slower rate of progress in reading.

As can be seen from both tables, gains in reading are not directly related to IQ or chronological age. The instructional program seems sufficient to produce fairly normal progress (one month's gain in achievement for one month's effort) for sixteen of the twenty-five children.

As can be seen in Table III, non-graded Class I had nine of twelve children who were non-readers in November, 1969. Children three, eight, and ten were reading at lowest pre-primer level. All of the class can now read. Children three and eight had normal intelligence quotients. As can be noted in Table III, both made fairly normal progress for the two years.

Table IV indicates progress for nine children who are in the second year in the non-graded Class II in Amory. Six of the nine children could read some in November, 1969. Children one - six have averaged normal progress for the fourteen month period.

Children seven - nine, Table IV were all non-readers. Only child nine made normal progress for the fourteen months. Child eight has been on medication to control aggressiveness; some difficulty has been experienced in securing right medication.

Progress for both classes has begun to accelerate, and it is expected that by the end of the third year that most of the children will be making normal progress.

As can be seen in Table V, eight of the twelve children in Class I at Hamilton were non-readers in September. The reading achievement level of children 6, 8, 10, and 11 were estimated from the Silvaroli Informal Reading Inventory results. Lower Primary Form X of the California Reading Test was administered in January, 1971. All the children have now learned to read. All but three of the children have made normal or better progress in reading as indicated by a gain of four months or more. Child 2 was reading in the second pre-primer of the Ginn Tutorial Program; thus, his classroom performance was better than test score. Children 11 and 12 both had the lowest scores on the Illinois Test of Psycholinguistic Abilities.

Table VI indicates the improvement in reading shown in Class II at Hamilton. Children 3, 4, 8, and 9 were non-readers. The first three could not write their names. The reading levels of the other eight children are estimated from the results of the Silvaroli Informal Reading Inventory. Seven of the twelve children made normal or better progress during their first five months in the class.

As can be seen from both tables V and VI, IQ and chronological age do not indicate rate of progress though the level of achievement seems to be more related to IQ level. The results from Aberdeen indicate that progress should accelerate during the second year of the program at Hamilton.

TABLE I

COMPARISON OF

CALIFORNIA READING TEST RESULTS[1]

FOR NON-GRADED CLASS I

School: Aberdeen Teacher: Mrs. Waldrop

	Child	Sex	C.A.	I.Q.	Total Reading Scores 8/70[1]	1/71[2]	Gain+ Loss- - (Mos.)
1.	D. Gates	F	7-5	95	NR[3]	1.4	+ .6
2.	S. Gosa	F	8-3	96	1.6	2.2	+ .6
3.	S. Griggs	F	7-2	98	1.2	1.9	+ .7
4.	C. Harrell	M	8-2	107	NR	1.5	+ .7
5.	R. Heard	F	8-0	79	NR	1.4	+ .6
6.	C. Jones	F	7-7	93	1.1	1.5	+ .4
7.	L. Metcalf	F	7-5	73	1.1	1.3	+ .2
8.	K. Reeves	M	7-4	88	1.4	2.0	+ .6
9.	G. W. Ruth[4]	M	7-9	78	1.3	1.7	+ .4
10.	Mary Ruth	F	7-2	103	1.2	1.5	+ .3
11.	V. Ruth	M	8-9	101	1.4	1.6	+ .2
12.	T. West	F	7-2	91	1.1	1.5	+ .3

1. Lower Primary Form W
2. Lower Primary Form X
3. Non-Reader - Achievement Level estimated at .8
4. Second Year in Class

TABLE II

COMPARISON OF CALIFORNIA READING

TEST RESULTS FOR NON-GRADED CLASS II

FOR FOURTEEN MONTHS

School: Aberdeen Teacher: Mr. J. Bourland

Child	Sex	C.A.	WISC IQ	Total Reading Score 9/69[1]	Score 1/71[2]	2-year Gain+ Loss-	Av. Per Year
1. W. Allen	M	8-5	80	NR[3]	2.6	+ 1.5	+ .8
2. R. Oliver	M	9-11	86	1.2	2.6	+ 1.4	+ .8
3. R. Ross	M	10-7	66	NR	2.2	+ 1.4	+ .7
4. b. Easter	F	10-8	63	1.4	2.6	+ 1.2	+ .6
5. R. Jones	M	10-9	75	1.4	2.1	+ .7	+ .4
6. S. Tutor	F	11-4	58	2.5	3.3	+ .8	+ .4
7. J. West	M	9-0	83	1.2	2.5	+ 1.3	+ .7
8. D. Jones	M	9-4	79	1.2	2.3	+ 1.1	+ .6
9. J. Ross	M	9-5	83	NR	2.4	+ 1.6	+ .8
10. D. Langston	M	9-6	81	1.2	2.8	+ 1.6	+ .9
11. P. Dean	M	9-7	80	1.2	1.7	+ .5	+ .3
12. E. Chaney	F[4]	10-0	80	2.0	3.3	+ 1.3	+1.3
13. C. Card	F[4]	9-7	67	1.8	3.2	+ 1.4	+1.4

1. Lower Primary Form W
2. Upper Primary Form X
3. Non Reader
4. First Year in Class

TABLE III

COMPARISON OF CALIFORNIA READING

TEST RESULTS FOR NON-GRADED CLASS I (AMORY)

OVER FOURTEEN MONTHS

School - Amory Teacher: Hernigan

Child	Sex	C.A.	I.Q.	Total Reading Scores 11/69[1]	1/71[2]	Gain + Loss -	Ave. Per Year
1. R. Edwards	M	7-8	64	NR[3]	1.5	+ .7	+ .4
2. K. White	M	7-9	88	NR	1.2	+ .4	- .2
3. A. Turnage	M	8-4	100	1.2	2.6	+1.4	+ .7
4. W. Pierce	F	8-7	54	NR	1.2	+ .4	+ .2
5. D. Renfroe	M	8-10	67	NR	1.4	+ .6	+ .3
6. M. Guyton	F	8-11	59	NR	1.6	+ .8	+ .4
7. T. White	M	9-1	63	NR	1.5	+ .7	+ .4
8. S. Stanford	M	9-5	104	1.2	2.3	+1.1	+ .6
9. M. Beek	M	9-6	64	NR	2.1	+1.3	+ .7
10. K. Steinke	M	9-10	67	1.2	2.2	+1.0	+ .5
11. M. Rinehart	M	8-10	65	NR	1.6	+ .8	+ .4

1. Classes began November, 1969

2. Lower Primary Form W

3. Non-Reader - placed at .8 grade level for comparison

TABLE IV

COMPARISON OF CALIFORNIA READING

TEST RESULTS FOR NON-GRADED

CLASS 11 (AMORY) OVER

FOURTEEN MONTHS[5]

SCHOOL: AMORY TEACHER: YOUNG

CHILD	Sex	C.A.	I.Q.	Total Reading[3] Scores 11/69[1]	1/71[2]	Gain+ Loss-	Avg. (Mos.)
1. L. Lucas	M	8-11	85	1.4	3.4	+2.0	+1.0
2. B. Pope	M	9-11	111	3.0	4.1	+1.1	+ .6
3. D. Reeves	M	9-11	73	1.2	2.3	+1.1	+ .6
4. W. Rakestraw	M	9-10	97	1.8	3.4	+1.6	+ .8
5. P. Conwill	M	10-2	67	1.2	2.9	+1.7	+ .9
6. R. Renfroe	M	10-10	75	1.8	3.1	+1.3	+ .7
7. Donnie Capps[4]	M	9-11	59	NR[3]	1.5	+ .7	+ .4
8. R. Reeves[4]	M	11-0	59	NR	1.4	+ .6	+ .3
9. A. Renfroe[4]	F	10-9	65	NR	2.4	+1.6	+ .8

1. Classes began November, 1969
2. Upper Primary Form W
3. NR - Non reader placed at .8 grade level for comparison
4. Lower Primary Form W
5. Three children in class for one year are not included

TABLE V

RESULTS OF ADMINISTRATION

OF CALIFORNIA READING TEST

IN NON-GRADED CLASS 1 (HAMILTON)

SCHOOL: HAMILTON TEACHER: MRS. NANCY MOAK

CHILD	Sex	C.A.	I.Q.	Total Reading Scores 9/70	1/71[2]	Gain + Loss - Mos.
1. D. Rush	M	8-1	67	NR[3]	1.5	+ .7
2. J. Fields	M	7-5	73	NR	.8	± .0
3. C. Winders	M	7-8	91	NR	1.2	+ .4
4. J. Spruill	M	7-7	64	NR	1.2	+ .4
5. D. Terry	M	8-2	83	NR	1.3	+ .5
6. S. Trest	M	7-2	91	1.2	1.7	+ .5
7. J. Stokes	M	8-4	75	NR	2.1	+1.3
8. J. Welch	M	8-1	124	1.6	2.2	+ .6
9. N. Horn	F	7-2	85	NR	1.6	+ .8
10. H. Hanson	M	8-10	101	1.8	2.3	+ .5
11. R. Little	M	7-1	77	1.2	1.3	+ .1
12. R. Shinn	F	7-8	66	NR	1.0	+ .2

1. Estimated Level of Achievement
2. Lower Primary Form X
3. Non-Reader - Assigned - 8 Level on test Norms

TABLE VI

RESULTS OF FIRST ADMINISTRATION

OF CALIFORNIA READING TEST

IN NON-GRADED CLASS II (HAMILTON)

SCHOOL: HAMILTON TEACHER: MRS. LINDA HOLLINGSWORTH

CHILD	Sex	C.A.	I.Q.	Total Reading Scores 9/70[1]	1/71[2]	Gain + Loss-(Mos.)
1. C. Cantrell	F	10-2	81	2.0	3.4	+1.4
2. B. Gosa	M	10-3	77	1.8	2.1	+ .3
3. J. Harris	M	9-6	60	NR		
4. R. Harris	M	11-2	60	NR	1.3	+ .5
5. M. Raden	M	9-2	81	1.8	1.9	+ .1
6. B. Reed	M	10-3	76	1.8	2.2	+ .4
7. B. Rye	M	9-8	67	1.6	1.9	+ .3
8. J. Shinn	M	8-10	60	NR	1.3	+ .5
9. C. Shinn	F	10-2	67	NR	1.6	+ .8
10. T. Smitherman	M	10-7	82	1.6	1.9	+ .3
11. H. Smith	M	11-0	85	1.8	2.5	+ .7
12. S. Thomas	M	10-3	67	1.4	1.8	+ .4

1. Estimated Level of Achievement
2. Lower Primary Form X
3. Absent

The preceding data were compiled during the first two years of the operation of the Title III Project.

The following Analysis of Test Data is a summary of the information collected during the 1969-72 period.

A. Introduction

This part of the report seeks to answer in part a basic question: Can a curriculum be planned and instruction be given to help children overcome the deficiencies indicated by the comprehensive diagnostic procedure developed? The analysis and interpretation of data will refer to progress in reading, perceptual motor development, intellectual abilities, and psycholinguistic abilities that resulted from curriculum content and instruction given.

B. Sample

The final sample of which results were obtained consists of 103 children enrolled for varying lengths of time in the non-graded classes at Aberdeen, Amory, and Hamilton (see Table I). Approximately 100 other children were screened and qualified for the class but were unable to be placed in the program due to limitations on class size. Six other children moved away from the school district before testing was done.

A breakdown of the sample by sex indicates the same ratio (8:2) of males to females that other research reports on learning disabled children have included. However, the Aberdeen sample included 35% girls--a fact that may indicate a bias of the screening selection procedure that gives boys preference over girls.

Although developing labels for children was not a purpose of the project, the 103 children were classified according to IQ levels to satisfy the needs of the Special Education Division of the State Department of Education. Table II shows the number of children in each category at each of the three locations of the non-graded classes.

Table II
Classification By I.Q.

	Aberdeen	Hamilton	Amory	Total
Educable Mentally Retarded (I.Q. = 79 and below)	17	15	20	52
Learning Disability (I.Q. = 80 and above)	25	16	10	51

A total of 52 children were classified as Educable Mentally Retarded, and 51 were classified as learning disability children. IQ scores used were their fullscale scores on the WISC.

One of the major disabilities found in the entire sample was the inadequate level of reading they had achieved. Table III shows the levels of reading represented by the 103 children of the sample. The Silvaroli Informal Reading Inventory was used as a screening instrument to determine the independent and instructional reading levels. As can be seen from Table III, forty-one children couldn't recognize one word in the pre-primer list of the word recognition. An additional thirty-seven were functional non-readers for although they could recognize from 20% - 85% of the pre-primer words, they were at frustration level on the pre-primer oral reading selection. Thus 78 or 75% of the 103 children could not read.

Table III
Beginning Reading Levels
Based on Silvaroli Informal Inventory[2]

Non-Readers	41
PP[1]	17
PP[2] - PP[3]	20
Primer	11
First	11
Second	3
Total	103

TABLE I

School: Amory

	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handic
1.	Ricky Edwards	M	6-5	64	4-10	Non-Reader	EMR	Visual Motor: Ina & visual pursuit; Vision: acuity los far point; Hyperac
2.	Kenneth White	M	6-9	88	5-1	Non-Reader	LD	Visual Motor: Ina & visual pursuit; Vision: No vision farpoint; Articula
3.	Alexander Turnage	M	7-2	100	6-4	PP_1	LD	Visual Motor: Mix Vision: Depth per color perception l
4.	Wendy Pierce	F	7-7	54	4-1	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: Mildly fa
5.	Daniel Renfroe	M	7-10	67	4-5	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: Fusion la point; Articulatio
6.	Melba Guyton	F	7-11	59	4-6	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: No vision farpoint; Severe s
7.	Thomas White	M	8-1	63	5-5	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: Mildly fa Articulation Disor
8.	Steve Stanford	M	8-1	104	8-2	PP_1	LD	Visual Motor: Ina visual pursuits; m Physically handica
9.	Mitchell Beek	M	8-3	64	4-6	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: Alternati perception lacking disorder

TABLE I

CA	IQ	PLA	Reading Level	Classification	Other Handicaps
6-5	64	4-10	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: acuity loss at both near & far point; Hyperactive
6-9	88	5-1	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: No vision in right eye at farpoint; Articulation disorder
7-2	100	6-4	PP_1	LD	Visual Motor: Mixed laterality; Vision: Depth perception loss, color perception lacking
7-7	54	4-1	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Mildly farsighted
7-10	67	4-5	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Fusion lacking at near-point; Articulation disorder
7-11	59	4-6	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: No vision in right eye at farpoint; Severe speech disorder
8-1	63	5-5	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Mildly farsighted Articulation Disorder
8-1	104	8-2	PP_1	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Physically handicapped
8-3	64	4-6	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Alternating vision; color perception lacking; Articulation disorder

School: Amory (Cont.)

	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handi
10.	Kenneth Steinke	M	8-10	67	6-2	PP_1	EMR	Visual Motor: In visual pursuits; Articulation Diso
11.	Mark Rinehart	M	7-11	65	N/A	Non-Reader	EMR	Visual Motor: In visual pursuits; Vision: Fusion l farpoint and near perception lackin
12.	Mike Lindsey	M	8-2	81	N/A	Non-Reader	LD	Visual Motor: In visual pursuits; Speech disorder;
13.	Leatrice Lucas	M	8-0	85	7-11	PP_1	LD	Visual Motor: In visual pursuits;
14.	Bill Pope	M	9-2	111	10-1	1^2	Brain injured LD	Visual Motor: In visual pursuits Vision: Fusion l
15.	Donald L. Reeves	M	9-2	73	6-8	PP^1	EMR	Visual Motor: In visual pursuits;
16.	Wally Rakestraw	M	9-4	97	8-1	1^2	LD	Visual Motor: In visual pursuits; Vision: Fusion l
17.	Peter Conwill	M	9-6	67	6-1	PP^1	EMR	Visual Motor: In visual pursuits; Vision: Suppresse eye; Articulation
18.	Annie Renfroe	F	9-10	65	5-8	Non-Reader	EMR	Visual Motor: In visual pursuits; Articulation disor
19.	Robert Renfroe	M	9-11	75	6-1	P	EMR	Visual Motor: In visual pursuits; Vision: Fusion l Articulation disor

CA	IQ	PLA	Reading Level	Classification	Other Handicaps
8-10	67	6-2	PP_1	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Articulation Disorder
7-11	65	N/A	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Fusion lacking at both farpoint and nearpoint; color perception lacking
8-2	81	N/A	Non-Reader	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Speech disorder; brain injured
8-0	85	7-11	PP_1	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
9-2	111	10-1	1^2	Brain injured LD	Visual Motor: Inadequate mobility-visual pursuits Vision: Fusion lacking; Hyperactive
9-2	73	6-8	PP^1	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
9-4	97	8-1	1^2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Fusion lacking
9-6	67	6-1	PP^1	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Suppresses vision in left eye; Articulation Disorder
9-10	65	5-8	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Articulation disorder
9-11	75	6-1	P	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Fusion lacking Articulation disorder

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School: Amory (Cont.)

	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handic
20.	Truman R. Reeves	M	10-1	59	6-1	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: Fusion la Articulation disor
21.	Steven Kennedy	M	9-6	60	N/A	1^2	EMR	Visual Motor: Ina visual pursuits; m
22.	Donnie Capps	M	9-0	59	N/A	PP^1	EMR	Visual Motor: Ina visual pursuits; m Hearing impaired: both ears
23.	Tommy Langford	M	9-8	86	N/A	PP^1	LD	Visual Motor: Ina cerebral palsy. V vision in right ey larity; color perc
24.	Melinda Ritter	F	10-8	61	N/A	1^2	EMR	Visual Motor: Mix
25.	Cliff Young	M	10-9	79	N/A	1^1	EMR	Visual Motor: Ina visual pursuits; m
26.	Linda Law	F	9-3	76	N/A	PP^2	EMR	Visual Motor: Ina mixed laterality
27.	R. Anderson	M	8-8	74	N/A	PP^3	EMR	Visual Motor: Ina pursuits; mixed la Vision: color per mildly farsighted
28.	Cecil Smith	M	9-2	107	N/A	1^2	LD	Visual Motor: Mix Vision: Farpoint

Cn	ID	PLA	Reading Level	Classification	Other Handicaps
10-1	59	6-1	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Fusion lacking; Hyperactive Articulation disorder; Possibly Emo. Distb.
9-5	60	N/A	1^2	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
9-0	59	N/A	PP^1	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Hearing impaired: hearing aids in both ears
9-8	86	N/A	PP^1	LD	Visual Motor: Inadequate due to cerebral palsy. Vision: no vision in right eye; no binocularity; color perception lacking
10-8	61	N/A	1^2	EMR	Visual Motor: Mixed laterality
10-9	79	N/A	1^1	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
9-3	76	N/A	PP^2	EMR	Visual Motor: Inadequate mobility-mixed laterality
8-8	74	N/A	PP^3	EMR	Visual Motor: Inadequate visual pursuits; mixed laterality Vision: color perception inadequacy mildly farsighted
9-2	107	N/A	1^2	LD	Visual Motor: Mixed laterality Vision: Farpoint fusion inadequacy

School: Amory (Cont.)

	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handic
29.	Paul Barnes	M	7-4	104	N/A	PP[1]	LD	Visual Motor: Mix Vision: Fusion in nearpoint, nearsig eye; Mild hearing
30.	Terry Payne	M	8-8	76	N/A	PP[1]	EMR	Visual Motor: Mix Vision: nearsight color perception

CA	IQ	PLA	Reading Level	Classification	Other Handicaps
7-4	104	N/A	PP[1]	LD	Visual Motor: Mixed laterality Vision: Fusion inadequacy at nearpoint, nearsighted in right eye; Mild hearing loss
8-8	76	N/A	PP[1]	EMR	Visual Motor: Mixed laterality Vision: nearsighted, inadequate color perception

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School: Hamilton

act	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handic
1.	David Rush	M	7-8	67	5-7	Non-Reader	EMR[1]	Visual Motor: Ina & visual pursuit; Vision: Nearsighte
2.	Jerry Fields	M	7-0	73	4-6	Non-Reader	EMR	Visual motor: Inad & visual pursuit;
3.	Charles Winders	M	7-3	91	6-5	Non-Reader	LD[2]	Visual motor: Ina & visual pursuit; sighted; speech di
4.	James Spruill	M	7-2	64	5-0	Non-Reader	EMR	Visual Motor: Ina & visual pursuit; Vision: fusion lac point; farsighted
5.	Danny Terry	M	7-9	83	5-11	Non-Reader	LD	Visual Motor: Ina & visual pursuit;
6.	Stephen Trest	M	6-9	91	5-9	PP[2]	LD	Visual Motor: Ina & visual pursuit; Vision: left eye f perception difficu
7.	James Stokes	M	7-11	75	6-3	Non-Reader	EMR	Visual Motor: Ina & visual pursuit;
8.	Jim Welch	M	7-8	124	6-10	P	LD	Visual Motor: Ina & visual pursuit; Vision: farsighted
9.	Nancy Horn	F	6-9	85	5-10	Non-Reader	LD	Visual Motor: Ina & visual pursuit;
10.	Hans Hanson	M	8-5	101	7-10	P	LD	Visual Motor: Ina visual pursuit; mi hyperactive

[1] Educable Mentally Retarded
[2] Learning Disability

CA	IQ	PLA	Reading Level	Classification	Other Handicaps
7-8	67	5-7	Non-Reader	EMR[1]	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: Nearsighted
7-0	73	4-6	Non-Reader	EMR	Visual motor: Inadequate mobility & visual pursuit; mixed laterality
7-3	91	6-5	Non-Reader	LD[2]	Visual motor: Inadequate mobility & visual pursuit; Vision: Nearsighted; speech difficulty
7-2	64	5-0	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: fusion lacking at far-point; farsighted
7-9	83	5-11	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality
6-9	91	5-9	PP[2]	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: left eye farsighted; visual perception difficulty
7-11	75	6-3	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality
7-8	124	6-10	P	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: farsighted in left eye
6-9	85	5-10	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality
8-5	101	7-10	P	LD	Visual Motor: Inadequate mobility; visual pursuit; mixed laterality; hyperactive

le Mentally Retarded
g Disability

School: Hamilton (Cont.)

	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handi
11.	James R. Little	M	6-8	77	5-0	PP[2]	EMR	Visual Motor: Ina & visual pursuit;
12.	Rhetha A. Shinn	F	7-3	66	4-1	Non-Reader	EMR	Visual Motor: Ina & visual pursuit;
13.	Cynthia Cantrell	F	9-9	81	N/A	2[1]	LD	Visual Motor: Ina & visual pursuit; Vision: suppresse farpoint, fusion c
14.	Bobby Goss	M	9-10	77	6-6	P	EMR	Visual Motor: Ina visual pursuit; mi Vision: suppresse farpoint, visual p ficulty
15.	Johnny Harris	M	9-1	60	5-4	Non-Reader	EMR	Visual Motor: Ina & visual pursuit, Vision: Fusion lac point, could not w
16.	Robert Harris	M	10-9	60	4-10	Non-Reader	EMR	Visual Motor: Ina & visual pursuit; visual perception culation defect; c
17.	Mike Raden	M	8-9	81	6-11	P	LD	Visual Motor: Ina & visual pursuit; articulation defec
18.	Benny Reed	M	9-10	76	7-2	P	EMR	Visual Motor: Ina & visual pursuit; Vision: color per suppresses right e articulation diffi perception difficu
19.	Bryan Rye	M	9-3	67	5-11	P	EMR	Visual Motor: Ina & visual pursuit; Vision: no vision roid deficiencies,

t.)

CA	IQ	PLA	Reading Level	Classification	Other Handicaps
6-8	77	5-0	PP[2]	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality
7-3	66	4-1	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality
9-9	81	N/A	2[1]	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: suppresses right eye at farpoint, fusion out at nearpoint
9-10	77	6-6	P	EMR	Visual Motor: Inadequate mobility, visual pursuit; mixed laterality; Vision: suppresses right eye at farpoint, visual perception difficulty
9-1	60	5-4	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit, mixed laterality; Vision: Fusion lacking at nearpoint, could not write name
10-9	60	4-10	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; visual perception inadequate, articulation defect; could not write name
8-9	81	6-11	P	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; articulation defect
9-10	76	7-2	P	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: color perception lacking, suppresses right eye at nearpoint; articulation difficulty; visual perception difficulty
9-3	67	5-11	P	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: no vision in one eye, thyroid deficiencies, very hyperactive

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School: Hamilton (Cont.)

Tot	Name	Sex	CA	IQ	PLA[2]	Reading Level	Classification	Other Handic
20.	Jasper Shinn	M	8-5	60	5-8	Non-Reader	EMR	Visual Motor: Ina & visual pursuit; Vision: color perc low verbal express
21.	Cornelia Shinn	F	9-9	67	6-7	Non-Reader	EMR	Visual Motor: Ina & Visual pursuit; difficulty with au
22.	Timmie Smitherman	M	10-2	82	7-4	P	LD	Visual Motor: Ina & visual pursuit;
23.	Henry L. Smith	M	10-6	85	8-0	P	LD	Visual Motor: Ina & visual pursuit; Vision: suppresses farpoint, vertical
24.	Sammy Thomas	M	9-11	67	6-3	PP[3]	EMR	Visual Motor: Ina & visual pursuit, Vision: suppresses point, visual perc
25.	Prentiss Smitherman	M	6-8	98	N/A	Non-Reader	LD	Visual Motor: Ina & visual pursuit; difficulty with de and color percept
26.	James Hutchinson	M	6-11	81	N/A	Non-Reader	LD	Visual Motor: Ina & visual pursuit; Vision: mild nears articulation defec
27.	Misty Adams	F	7-0	87	N/A	Non-Reader	LD	Visual Motor: Ina & visual pursuit; Vision: convergenc inadequate depth p hyperactive

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CA	IQ	PLA	Reading Level	Classification	Other Handicaps
8-5	60	5-8	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: color perception lacking; low verbal expression ability
9-9	67	6-7	Non-Reader	EMR	Visual Motor: Inadequate mobility & Visual pursuit; mixed laterality; difficulty with auditory abilities
10-2	82	7-4	P	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality
10-6	85	8-0	P	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: suppresses right eye at farpoint, vertical convergence off
9-11	67	6-3	PP[3]	EMR	Visual Motor: Inadequate mobility & visual pursuit, mixed laterality; Vision: suppresses left eye at farpoint, visual perception difficulty
6-8	98	N/A	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; difficulty with depth perception and color perception
6-11	81	N/A	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: mild nearsightedness, articulation defect
7-0	87	N/A	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: convergence inadequacy, inadequate depth perception; hyperactive

School: Hamilton (Cont.)

	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handic
28.	David Hall	M	7-0	85	N/A	Non-Reader	LD	Visual Motor: Ina & visual pursuit; Vision: poor at bo farpoint
29.	Rayburn White	M	7-3	95	N/A	Non-Reader	LD	Visual Motor: Ina & visual pursuit; Vision: nearsighte Severe Speech Prob
30.	Jeff Lucius	M	7-0	79	N/A	Non-Reader	EMR	Visual Motor: Ina & visual pursuit; Vision: fusion and inadequacy

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CA	IQ	PLA	Reading Level	Classification	Other Handicaps
7-0	85	N/A	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: poor at both nearpoint & farpoint
7-3	95	N/A	Non-Reader	LD	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: nearsighted in left eye; Severe Speech Problem
7-0	79	N/A	Non-Reader	EMR	Visual Motor: Inadequate mobility & visual pursuit; mixed laterality; Vision: fusion and depth perception inadequacy

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School: Aberdeen

	Name	Sex	CA	IQ	RLA	Reading Level	Classification	Other Handic
1.	Deborah Gates	F	7-0	95	5-5	Non-Reader	LD	Visual Motor: Ina visual pursuits; m Vision: Inadequat tion, color percep convergence
2.	Sheila Gosa	F	7-10	96	7-3	P	LD	Visual Motor: Ina visual pursuits; m Vision: Inadequat dep*h perception, point.
3.	Sandra Griggs	F	6-9	98	6-7	PP_1	LD	Visual Motor: Ina visual pursuits; m Hyperactive
4.	Chester Harrell	M	7-9	92	6-3	Non-Reader	LD	Visual Motor: Ina visual pursuits; m Articulation defec deficiency
5.	Ruth Heard	F	7-7	79	5-3	Non-Reader	EMR	Visual Motor: Ina mixed laterality; V inadequate at farpo
6.	Cynthia Jones	F	7-2	93	5-11	PP_2	LD	Visual Motor: Ina visual pursuits; m
7.	Linda Metcalf	F	7-0	73	5-3	PP_2	EMR	Visual Motor: Ina visual pursuits; m
8.	Keith Reeves	M	6-11	88	6-4	PP_3	LD	Visual Motor: Ina visual pursuits; Au ficulty with all au Hyperactive
9.	Gary Wayne Ruth	M	7-4	78	5-4	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: Farsighted disorder

CA	IQ	FLA	Reading Level	Classification	Other Handicaps
7-0	95	5-5	Non-Reader	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Inadequate depth perception, color perception, and convergence
7-10	96	7-3	P	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Inadequate farpoint vision, depth perception, fusion at near point.
9	98	6-7	PP_1	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Hyperactive
9	92	6-3	Non-Reader	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Articulation defect; Dietary deficiency
7	79	5-3	Non-Reader	EMR	Visual Motor: Inadequate mobility-mixed laterality; Vision: fusion inadequate at farpoint & nearpoint
2	93	5-11	PP_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
0	73	5-3	PP_2	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
11	88	6-4	PP_3	LD	Visual Motor: Inadequate mobility-visual pursuits; Auditory: difficulty with all auditory tasks; Hyperactive
4	78	5-4	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality Vision: Farsighted; Articulation disorder

School: Aberdeen (Cont.)

	Name	Sex	CA	IQ	RLA	Reading Level	Classification	Other Handica
10.	Mary E. Ruth	F	6-9	103	5-9	PP_1	LD	Visual Motor: Inad visual pursuits; mi
11.	Vincent Ruth	M	7-7	101	6-9	PP_3	LD	Visual Motor: Inad visual pursuits; mi severe speech impai with all auditory a
12.	Tammie West	F	6-9	91	5-8	PP_1	LD	Visual Motor: Mixe inadequate auditory growth disorder due nourishment
13.	Wayne Allen	M	7-4	80	5-9	Non-Reader	LD	Visual Motor: Inad visual pursuits; mi Vision: suppresses eye, color percepti sighted; hyperactiv
14.	Ricky Oliver	M	8-11	86	6-9	PP_1	LD	Visual Motor: Inad visual pursuits; mi Vision: color perc
15.	Richard Ross	M	9-6	66	5-6	Non-Reader	EMR	Visual Motor: Inad visual pursuits; mi Vision: slight los nearpoint; severe s
16.	Becky Easter	F	9-8	63	6-8	PP_1	EMR	Visual Motor: Inad visual pursuits; mi Vision: right eye depth perception, f overweight
17.	Ronnie Ray Jones	M	9-9	75	6-5	PP_3	EMR	Epileptic siezures
18.	Sandra Tutor	F	10-3	58	5-9	PP_3	EMR	Visual Motor: Inad visual pursuits; mi Vision: fusion out

LA	IQ	RLA	Reading Level	Classification	Other Handicaps
6-9	103	5-9	PP_1	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
7-7	101	6-9	PP_3	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; severe speech impairment; difficulty with all auditory abilities
6-9	91	5-8	PP_1	LD	Visual Motor: Mixed laterality; inadequate auditory abilities; growth disorder due to early mal-nourishment
7-4	80	5-9	Non-Reader	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: suppresses vision in left eye, color perception lacking, far-sighted; hyperactive
8-11	86	6-9	PP_1	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: color perception inadequate
9-6	66	5-6	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: slight loss of acuity at nearpoint; severe speech problem
9-8	63	6-8	PP_1	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: right eye lacks vision; depth perception, frequent illness, overweig
9-9	75	6-5	PP_3	EMR	Epileptic siezures
10-3	58	5-9	PP_3	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: fusion out at nearpoint

School: Aberdeen (C...)

	Name	Sex	[illegible]	IQ	PLA	Reading Level	Classification	Other Handic
19.	Jerry Lee West	M	7-11	83	6-1	PP_3	LD	Visual Motor: Mix Vision: left eye point & nearpoint
20.	Donald Jones	M	8-3	79	5-10	PP_1	EMR	Visual Motor: Ina visual pursuits; m Vision: color per quate; articulatio
21.	Johnny Ross	M	8-4	83	6-10	Non-Reader	LD	Visual Motor: Ina visual pursuits; m
22.	Donald Langston	M	8-5	81	6-3	PP_1	LD	Visual Motor: Ina visual pursuits; m Vision: depth perc
23.	Philip Dean	M	8-6	80	6-5	PP_3	LD	Visual Motor: Ina visual pursuits; m Vision: suppresses loss at nearpoint; language concepts
24.	Cathy Card	F	9-2	67	5-4	2_2	EMR	Visual Motor: Ina visual pursuits; m Auditory: weak au Vision: Inadequat
25.	Elizabeth Chaney	F	9-5	80	6-4	1_2	LD	Visual Motor: Ina visual pursuits; m Hyperactive
26.	J. Stoddard	M	7-5	106	6-4	PP_2	LD	Visual Motor: Ina visual pursuits; m Vision: fusion la
27.	Ricky West	M	7-7	86	5-5	PP_2	LD	Visual Motor: Ina visual pursuits; m Vision: color per

	IQ	RLA	Reading Level	Classification	Other Handicaps
7-11	83	6-2	PP_3	LD	Visual Motor: Mixed laterality; Vision: left eye weak at both far-point & nearpoint
8-3	79	5-10	PP_1	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: color perception inadequate; articulation disorder
8-4	83	6-10	Non-Reader	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
8-5	81	6-3	PP_1	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: depth perception inadequate
8-6	80	6-5	PP_3	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: suppresses right eye, acuity loss at nearpoint; lacks general language concepts
9-2	67	5-4	2_2	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Auditory: weak auditory abilities; Vision: Inadequate depth perception
9-5	80	6-4	1_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Hyperactive
9-5	106	6-4	PP_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: fusion lag at nearpoint
9-7	86	5-5	PP_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: color perception lacking

School: Aberdeen (Cont.)

	Name	Sex	CA	IQ	PLA	Reading Level	Classification	Other Handic
28.	James Willis	M	7-8	62	4-10	Non-Reader	EMR	Visual Motor: Ina visual pursuits; n Vision: Fusion ou Severe speech disc
29.	Tommy Claxton	M	8-3	100	8-0	1_2	LD	Visual Motor: Ina visual pursuits; m Vision: Fusion la Hyperactivity
30.	James D. Bowen	M	8-8	85	7-6	1_2	LD	Visual Motor: Ina visual pursuits; m
31.	Bobby L. Hicks	M	9-7	97	8-8	P	LD	Visual Motor: Ina visual pursuits; m Vision: Fusion in nearpoint
32.	William Ward	M	8-6	102	7-5	1_2	LD	Visual Motor: Ina visual pursuits; m Vision: Fusion in nearpoint; no visi
33.	Jerry Crosby	M	8-10	82	7-8	1_2	LD	Visual Motor: Ina visual pursuits; m Vision: Fusion in nearpoint and farp
34.	Gregg Dickey	M	11-4	74	8-5	2_1	EMR	Visual Motor: Ina pursuits; mixed la
35.	Terry Lee Strong	M	7-11	94	7-4	PP_3	LD	Visual Motor: Ina Articulation defec
36.	Ronnie Eckford	M	7-2	78	5-7	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Slightly nearsighte palsy

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CA	IQ	PLA	Reading Level	Classification	Other Handicaps
7-8	62	4-10	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: Fusion out at nearpoint; Severe speech disorder
8-3	100	8-0	1_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: Fusion lag at nearpoint; Hyperactivity
8-8	85	7-6	1_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality
9-7	97	8-8	P	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: Fusion inadequacy at nearpoint
8-6	102	7-5	1_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: Fusion inadequacy at nearpoint; no vision in right eye
8-10	82	7-8	1_2	LD	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: Fusion inadequacy at both nearpoint and farpoint
11-4	74	8-5	2_1	EMR	Visual Motor: Inadequate visual pursuits; mixed laterality
7-11	94	7-4	PP_3	LD	Visual Motor: Inadequate mobility; Articulation defect
7-2	78	5-7	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Slightly nearsighted; cerebral palsy

School: Aberdeen (Cont.)

	Name	Sex	CA	IQ	PLa	Reading Level	Classification	Other Handic
37.	Marilyn Devould	F	7-9	71	4-10	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: Couldn't Severe speech disc
38.	Clifton Holley	M	7-1	85	7-9	PP_3	LD	Visual Motor: Ina pursuits
39.	William Jones	M	7-1	73	6-1	Non-Reader	EMR	Visual Motor: Ina visual pursuits; m Vision: fusion in point; reduced dep
40.	Retia K. Light	F	9-4	76	6-6	PP_2	EMR	Visual Motor: Mix Vision: fusion in nearpoint
41.	Sheba G. Light	F	9-4	75	6-8	PP_3	EMR	Vision. Fusion in nearpoint
42.	Anthony Young	M	9-2	38	3-10	Non-Reader	EMR	Visual Motor: Ina visual pursuits; H
43.	Larry Ford	M	9-7	75	7-4	PP_3	EMR	Visual Motor: Ina visual pursuits; perception inadequ

(cont.)

CA	IQ	PLa	Reading Level	Classification	Other Handicaps
7-9	71	4-10	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: Couldn't test; Severe speech disorder
7-1	85	7-9	PP_3	LD	Visual Motor: Inadequate visual pursuits
7-1	73	6-1	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; mixed laterality; Vision: fusion inadequacy at far-point; reduced depth perception
9-4	76	6-6	PP_2	EMR	Visual Motor: Mixed laterality; Vision: fusion inadequacy at nearpoint
9-4	75	6-8	PP_3	EMR	Vision: Fusion inadequacy at nearpoint
9-2	38	3-10	Non-Reader	EMR	Visual Motor: Inadequate mobility-visual pursuits; Hyperactive
9-7	75	7-4	PP_3	EMR	Visual Motor: Inadequate mobility-visual pursuits; Vision: depth perception inadequate

Two of the 78 non-readers were entering school and had been referred by a kindergarten and a social worker. Of the remaining 76 non-readers, 29 had been in school one previous year; 28, two years; 14, three years; and 5, four years. Of the remaining 25 children, at least two years of schooling had been required to achieve a primer level of instruction, five years for the one child at the beginning second grade level, and three years for the child at high second grade level.

As can be seen from Table IV, the characteristic common to all 103 children was neurological disorganization.[3] (A further discussion of this fact is included in the analysis of results section.) Ninety-seven percent of the children indicated the same language deficiency on the Illinois Test of Psycholinguistic Abilities as they did on the IQ tests.

Sixty-two percent of the children indicated on the Telebinocular Vision Test a variety of visual inadequacies such as significant losses in visual acuity, binocularity depth perception and color perception. Seventy percent of the Aberdeen children exhibited visual difficulties while only 50% of Amory children did so.

Also indicated in Table IV is that 28 percent of the children had speech-articulation defects. Ten percent of the children were noted as being hyperactive and 3 percent had anomalies resulting from dietary deficiencies. It is probable that the percentage in the latter two categories would have been much higher if the assessment process had been sensitive to these two characteristics.

In summary then, if the characteristics of the 103 children in this sample were to be generalized to all learning disabled children, a child either classified as EMR or Learning Disabled could be expected to: Show significant central nervous system involvement as indicated by inadequate visual, auditory, and motor development that results in significant underdevelopment in oral language, reading, and writing.

C. Treatment

As indicated in the results of Table I, the children selected for classes were deficient in language abilities. Other deficiencies discovered in the diagnostic procedure were:

1. Inadequate or no reading ability
2. Visual-motor inadequacy
3. Mixed laterality
4. Inadequate or no handwriting ability
5. Inadequate quantitative abilities

Table A indicates how the test diagnosis was related to instructional program.

We experimented with the following programs to see if they could help overcome the deficiencies in reading, handwriting, spelling, and oral language:

1. Distar Reading Program
2. Distar Language Program
3. Ginn Tutorial Program
4. Write and See (Programmed Handwriting)
5. Peabody Language Program
6. Our Working World
7. AAAS Science Program

All programs provided sound instructional procedures and were designed especially for language-disabled children. Some children received instruction in both the Distar and Ginn programs; others, only in one of the two. We discovered, for instance, that some of the children with auditory disabilities benefitted from the Distar program, others did not.

Additional supplementary materials of appropriate difficulty levels and comparable vocabularies were fed into the reading program for independent work in reading. In addi-

TABLE A

INSTRUMENTS	DIAGNOSIS	REMEDIAL PROGRAM
WISC ITPA	Language Disability	Peabody Language Kit Distar Language Our Working World AAAS Science Program Language-Experience Stories
Silvaroli Informal Reading Inventory	Reading Disability 1. Sight Vocabulary 2. Oral Reading	Ginn Tutorial Distar Reading SRA Linguistic Series Charles Merrill Skill-Texts Continental Press Reading-Thinking Skills
Neurological Organization Test Telebinolular	Visual Motor Inadequacy Mixed Laterality Inadequate fusion Poor handwriting	Mobility-Visual Pursuit Exercises Kephart Chalkboard Exercises Belgau Exercises Frostig Visual Perception Exercises "Write and See" Handwriting Program
Informal Arithmetic Tests	Inadequate quantitative concepts	Cuisenaire Rods

In addition to classification by I.Q. and reading levels, various other classifications became available as a result of the diagnostic assessments utilized in the project. Table IV presents the number and percentage of children from the sample that exhibited each characteristic.

Table IV
Other Characteristics Exhibited

N = 103	N	%
1. Neurologically Disorganized	103	100
2. Psycholinguistic Disability	97	94
3. Visual Difficulties	64	62
4. Speech-Articulation Defects	29	28
5. Hyperactive	10	10
6. Dietary Deficiencies	3	3
7. Hearing Impaired	3	3
8. Brain-Injured	2	2
9. Cerebral Palsy	2	2
10. Physically Handicapped	2	2
11. Emotionally Disturbed[1]	1	1
12. Epileptic Seizures	1	1

[1] Suspected but not official diagnosis

No child was listed as having the characteristic unless the medical, psychological or educational consultants to the project indicated it as a characteristic noted in the diagnosis.

tion, children had access to library books which they frequently checked out.

The Distar Language Program was designed to build in conceptual language and skills needed for discussion, reporting, and conversation. It was paced at the right rate for EMR children but had to be supplemented with other activities for learning disability children. Spelling was introduced in Level II of the program.

For the purpose of incorporating more technical concepts into the children's oral language, the Working World Social Studies Series and the AAAS Science Program were incorporated this year. Neither program required reading skills as a basis for acquiring the concepts.

The Handwriting "Write and See" program, programmed instruction developed by B. F. Skinner, was also included. It begins at level 1 with manuscript writing and makes the change-over to cursive at the end of level 2. The children, because of the specially treated paper, could identify their own handwriting inadequacies and correct them.

For building mathematical language and concepts, the Cuisenaire Rod program was included. Cuisenaire rods use color and length for helping children discover quantitative relationships. They provide concrete material to help the children learn the major arithmetical operations. Children with normal arithmetic ability were given instruction in the school adopted arithmetic program.

Perceptual-Motor Activities, undergirding the aforestated instructional programs, was a program of perceptual-motor activities to treat the disabilities that all the children exhibited. It was hoped that the incorporation of those activities would increase the ability of the children to benefit from the instructional program. An hour a day was devoted to this program. Perceptual-Motor activities were made up of:

1. Cross-pattern mobility training
2. Visual Pursuit training
3. Balance Training with walking boards and balance boards
4. Ocular motility training
5. Kephart's chalkboard training for gross motor development

When the children indicated they had mastered the chalkboard work, they were given training in the five areas of visual perception defined by Marianne Frostig.

Scheduling Instruction:

With only 12 children in each class, and with the assistance of the teacher aide, small group instruction and individual tutoring could be carried on at the same time.

The following was a schedule of a typical day for each of the classes:

8:00 - 8:10	Call roll, lunch money, and devotional
8:10 - 8:30	Group I Reading - Teacher Group II Cont. Press - Aide
8:30 - 8:50	Group II Reading - Teacher Group I Cont. Press - Aide
8:50 - 9:20	Arithmetic - Teacher Aide works with Kenneth White on his number names with the number symbols
9:20 - 9:50	Group I Language - Teacher Group II - Peabody Language Kit - Aide
9:50 - 10:30	Recess
10:30 - 11:30	Exercise - Teacher Frostig - Aide
12:45 - 1:00	Storytime or rest - Teacher or Aide
1:00 - 1:30	Group II Language - Teacher Group I - Peabody Language Kit - Aide

1:30 - 2:00 Handwriting - Teacher
Aide works with two that are just learning to write their names

2:00 - 2:30 Monday, Tuesday, & Thursday - Social Studies
Wednesday - Art
Friday - Library
(During this time, aide usually does clerical work)

2:30 - 2:40 Clean room and go home

D. Evaluation of Reading Improvement

As was indicated in prior analysis (See Table III), 41 of the 103 children indicated they knew no words; another 37 who knew so few words and had no independent level of reading would have to be classified as non-readers. All but 2 of the children had had at least one prior year of schooling.

The California Reading Test (1963 edition) was selected as the criterion instrument for measuring gains in reading achievement. It meets most requirements for sound test construction and norming and is particularly suited to slow learners. Alternate forms are available for each level.

The Lower Primary Form (Grades 1 and Low 2) measures achievement in vocabulary and comprehension. The Upper Primary Form (Grades High 2, 3, and 4) measures achievement in vocabulary and three types of silent reading comprehension -- following directions, reference skills, and interpretation. The three main interpretation skills are reading for details, getting main idea, and making inferences.

Also used as a way to keep check on how well children were meeting the objectives of our reading curriculum and as a check against California reading scores, was the Silvaroli Informal Reading Inventory. The Silvaroli includes a word recognition test that covers levels PP-6. The oral reading test includes the words from the word recognition lists in context. The child's independent, instructional, and frustration levels are determined by a scoring guide that uses both word recognition in context and comprehension as criteria.

Results of the testing are divided up according to the number of years that the children spent in the non-graded classes. Only 17 children spent three years in a non-graded class, 45 spent 2 years, and 40 spent 1 year. One child's progress is not reported since final test data is lacking.

Three Year Results. Table V shows the results after 3 years instruction in non-graded classes at Amory and Aberdeen. As can be seen all 17 children learned to read; only 4 of the 17 could read enough in 1969 to be said to be reading and take the Lower Primary form of the California.

IQ does not seem to be highly related to progress nor to level obtained. For example, children 14 and 17 are the same age but have 8 points difference in IQ. The child with the 75 IQ made 9 months more achievement than the child with the 83 IQ.

Only two of the children (5 and 10) made average progress--1 month's growth in achievement for each month in the class. Children 3, 4, and 7 approach normalcy. If this had been their first three years in school, they would show only a 3 month loss in grade 3.

It was noted in the prior progress reports that there was a tendency toward acceleration in learning to read. Table VI compares the average gains for 1969-71 to gains made in 1971-72 for the 17 children included in Table V. As can be seen, 11 of the 17 did accelerate in the third year. Six of the eleven show significant jumps in their average reading gains. This fact raises the questions of how long the acceleration would continue and if they would eventually catch up age/grade placement-wise if instruction were to continue.

Table VII compares the gains in word recognition achievement on the Silvaroli to achievement gains on the California. As can be seen, nine of the seventeen children had average

TABLE V

Comparison of Pre- and Post-California Reading Test Results
for Students in Non-Graded Classes
for Three Years (1969-1972)

Child	Sex	C.A.[1]	I.Q.[2]	11/69[3]	5/72	3 Yr. Gain	Ave. Gain Per Year
School: Amory							
1. W. Pierce	F	9-11	54	NR[4]	1.8	+1.0	+0.3
2. M. Guyton	F	10-3	59	NR	3.2	2.4	+0.8
3. R. Reeves	M	12-9	59	NR	2.4	1.6	0.5
4. M. Beek	M	10-9	64	NR	3.2	2.4	0.8
5. A. B. Renfroe	F	12-7	65	NR	4.1	3.3	1.1
6. D. Renfroe	M	10-2	67	NR	2.3	1.5	0.5
7. P. Conwill	M	11-11	67	1.2	3.7	2.5	0.8
8. D. Reeves	M	11-7	73	1.2	3.3	2.1	0.7
9. R. Renfroe	M	12-7	75	1.6	3.4	1.8	0.6
10. S. Stanford	M	10-9	104	1.2	3.9	2.7	0.9
School: Aberdeen							
11. S. Tutor	F	12-8	58	2.2	3.4	1.2	+0.4
12. B. Easter	F	12-0	63	1.4	2.9	1.5	0.5
13. R. Ross	M	11-11	66	NR	2.6	1.8	0.6
14. R. Jones	M	10-9	75	1.4	3.4	2.0	0.7
15. D. Jones	M	10-8	79	1.2	3.4	2.2	0.7
16. P. Dean	M	10-11	80	1.2	2.4	1.2	0.4
17. J. Ross	M	10-9	83	NR	2.5	1.7	0.6

[1]Chronological Age as of 5/72
[2]Full Scale WISC I.Q.
[3]Classes began in 11/69
[4]Estimated at 0.8 level

TABLE VI

Comparison of Average Gains Made in Two Years
to Gains Made Last Year in Amory-Aberdeen
Non-Graded Classes (1969-72)

		Average Gain 11/69-1/71	Average Gain 1/71-5/72
1.	W. Pierce	0.2	0.6
2.	D. Renfroe	0.3	0.5
3.	M. Guyton	0.4	0.8
4.	D. Jones	0.6	0.7
5.	R. Jones	0.4	0.7
6.	J. Ross	0.8	0.6
7.	S. Stanford	0.6	0.9
8.	M. Beek	0.7	0.8
9.	P. Dean	0.3	0.4
10.	D. Reeves	0.6	0.7
11.	R. Ross	0.7	0.6
12.	P. Conwill	0.9	0.8
13.	B. Easter	0.6	0.5
14.	A. B. Renfroe	0.8	1.1
15.	R. Renfroe	0.7	0.6
16.	S. Tutor	0.4	0.4
17.	R. Reeves	0.3	0.5

11/17 - rate accelerated 3rd year

1 same

5 - decreased by 1 month

TABLE VII

Gains on Silvaroli Word Recognition Test
Compared to Gains in Achievement
on California Reading Tests for Three Years

School: Amory	Silvaroli WR Total Gains	California Total	Silvaroli Average	California Average
1. Pierce	0.8	1.0	0.3	0.3
2. Guyton	2.5	2.4	0.8	0.8
3. R. Reeves*	0.7	1.6	0.2	0.5
4. Beek	2.7	2.4	0.9	0.8
5. A. Renfroe*	2.2	3.3	0.7	1.1
6. D. Renfroe	1.0	1.5	0.3	0.5
7. P. Conwill	2.2	2.5	0.7	0.8
8. D. Reeves	2.2	2.1	0.7	0.7
9. R. Renfroe	2.0	1.8	0.7	0.6
10. S. Stanford*	1.5	2.7	0.5	0.9
School: Aberdeen				
11. Tutor**	2.4	1.2	0.8	0.4
12. Easter	1.5	1.5	0.5	0.5
13. R. Ross	1.3	1.8	0.4	0.6
14. R. Jones**	3.2	2.0	1.1	0.7
15. D. Jones	2.5	2.2	0.8	0.7
16. P. Dean	1.5	1.2	0.5	0.4
17. J. Ross*	0.7	1.7	0.2	0.6

gains that were approximately the same for both tests. These results indicate that their growth in word mastery was equal to their growth in achievement, a most unusual accomplishment in learning disabled children.

Children 3, 5, 10, and 17 indicate a common problem observed in other special education classes. They can read more words in context than they can in isolation.

Children 11 and 14 reflect the opposite case--they recognize more words in isolation than they do in context. The latter result may be due to continued visual difficulties that both experience. Child 14 has had epileptic seizures which are now controlled.

Table VII shows progress made by eighteen students who were given instruction for two years in the Hamilton non-graded classes. The Hamilton classes appear to be the model classes; they had the benefit of one-year's prior experience with the curriculum at Amory and Aberdeen. However, the children did have a different teacher each year and all four teachers were beginning teachers.

As can be seen in Table VIII, 13 of the 18 children could be classified as EMR children. Ten of the eighteen were non-readers. Children 1, 2, 3, and 7 had two years of prior schooling without learning to read. All four were black children with high absentee rates. Five of the other six had been through one prior year of school without learning any words.

If you consider an average gain of 8 months as normal progress, thirteen (72 percent) of the eighteen children made normal or better progress over the two years. The remaining five children made 6 to 7 average months gain per year.

As predicted in the interim report, eight of the nine children from 10-12 years of age exhibited a middle third grade achievement level. The acceleration of progress trend had been noted in the Amory-Aberdeen classes. Table IX shows the two-year gain was divided between the two years. As noted, 16 (89%) of the 18 children made normal or better progress the second year. Six of the children made 1 1/2 - 2 years progress. If that acceleration were to continue into a third year, these children's reading achievement could be normal for age/grade placement.

Table X compares Silvaroli word recognition achievement to California Reading Test achievement. As can be seen, in all 18 (100%) cases the gains in word recognition achievement equalled or exceeded achievement on the California. This result probably indicates that California achievement results may have been higher if more time had been available for teaching the reference skills which the California comprehension score includes. Again, the result is surprising since EMR children usually recognize more words in context than in isolation. The higher word recognition achievement, ranging from 5 months to 2 years-3 months, probably reflects the combined result of emphasis on word mastery in Ginn Tutorial, Basal reader, supplementary reading, and Dolch word programs.

Table XII presents gains in reading achievement for 14 children who were in the Aberdeen Amory non-graded classes from 1970 to 1972. The Aberdeen sample appears similar to the Hamilton one except for the unusual number (6 to 7) of girls involved. Five (71%) of seven made normal or better gains in achievement for the two years. The lowest average was six months.

Although Amory had lowest IQ's, this fact does not account for different results shown in Table XII. Three (43%) of the seven Amory children made average or better gains in achievement. The highest gain in one eye, has cerebral palsy, and had spent three prior years in a trainable class. The Slosson IQ of 86 was used for him since it seemed more accurate than the 58 obtained on the WISC. (The 58 IQ resulted from the effect of cerebral palsy on Tommy's visual-motor performance.)

Table XIII shows the amount of gains for each year the Table XII children were in the non-graded classes. The learning to read acceleration trend noted in prior discussion can be seen in 13 of 14 of the average gains shown in Table XIII. In Aberdeen, 7 (100%) of 7 children

TABLE VIII

Comparison of Pre- and Post-California Reading Test Results
for Students in Non-Graded Classes
for Two Years (1970-1972)

	Child	Sex	C.A.[1]	I.Q.[2]	9/70	5/72	2 Yr. Gain	Ave/per Year
1.	J. Shinn	M	10-1	60	NR[3]	2.1	1.3	+0.7
2.	J. Harris	M	10-6	60	NR	2.5	1.7	0.8
3.	R. Harris	M	12-4	60	NR	2.4	1.6	0.8
4.	J. Spruill	M	8-9	64	NR	1.9	1.1	0.6
5.	R. Shinn	F	9-0	66	NR	2.9	2.1	1.0
6.	D. Rush	M	9-4	67	NR	2.5	1.7	0.9
7.	C. Shinn	F	11-6	67	NR	3.5	2.7	1.4
8.	S. Thomas	M	11-7	67	1.3	3.3	2.0	1.0
9.	B. Rye	M	11-11	67	1.6	3.4	1.8	0.9
10.	J. Fields	M	8-7	73	NR	1.9	1.1	0.6
11.	B. Reed	M	11-7	76	1.8	3.5	1.7	0.9
12.	R. Little	M	8-3	77	1.2	2.5	1.3	0.7
13.	B. Gosa	M	11-7	77	1.8	3.4	1.6	0.8
14.	M. Raden	M	10-6	81	1.8	3.5	1.7	0.9
15.	T. Smitherman	M	11-11	82	1.6	3.4	1.8	0.9
16.	N. Horn	F	8-4	85	NR	2.9	2.1	1.0
17.	H. L. Smith	M	12-3	85	1.8	3.5	1.7	0.9
18.	C. Winders	M	9-0	91	NR	1.9	1.1	0.6

[1]Chronological Age as of 5/72
[2]Full Scale WISC I.Q.
[3]Estimated at 0.8 level

TABLE IX

Comparison of Reading Gains Made
Between First and Second Years
in Hamilton Non-Graded Classes

		9/70-5/71	9/71-5/72	Total
1.	J. Shinn	0.5	0.8	1.3
2.	J. Harris	0.6	1.1	1.7
3.	R. Harris	0.5	1.1	1.6
4.	J. Spruill	0.4	0.7	1.1
5.	R. Shinn	0.2	1.9	2.1
6.	D. Rush	0.7	1.0	1.7
7.	C. Shinn	0.8	1.9	2.7
8.	S. Thomas	0.4	1.6	2.0
9.	B. Rye	0.3	1.5	1.8
10.	J. Fields	0.0	1.1	1.1
11.	B. Reed	0.4	1.3	1.7
12.	R. Little	0.1	1.2	1.3
13.	B. Gosa	0.3	1.3	1.6
14.	M. Raden	0.1	1.6	1.7
15.	T. Smitherman	0.3	1.5	1.8
16.	N. Horn	0.8	1.3	2.1
17.	H. L. Smith	0.7	1.0	1.7
18.	C. Winders	0.4	0.7	1.1

TABLE X

Comparisons of Silvaroli Word Recognition Achievement Levels and California Reading Test Achievement Levels for Students in Hamilton Non-Graded Classes (1970-2)

	Silvaroli Achievement Level	California Achievement Level
1. J. Shinn	2.2	2.1
2. J. Harris	3.6	2.5
3. R. Harris	3.1	2.4
4. J. Spruill	2.8	1.9
5. R. Shinn	3.6	2.9
6. D. Rush	2.6	2.5
7. C. Shinn	4.2	3.5
8. S. Thomas	4.0	3.3
9. B. Rye	5.7	3.4
10. J. Fields	1.8	1.9
11. B. Reed	4.0	3.5
12. R. Little	3.6	2.5
13. B. Gosa	4.2	3.4
14. M. Raden	4.1	3.5
15. T. Smitherman	3.4	3.4
16. N. Horn	3.5	2.9
17. H. L. Smith	4.0	3.5
18. C. Winders	1.8	1.9

TABLE XI

Comparison of Gains Made on Silvaroli Word Recognition Test with Gains Made on California Reading Tests in Hamilton Non-Graded Classes (1970-2)

		Silvaroli Total Gain	California Total Gain	Silvaroli Average Gain	California Average Gain
1.	J. Shinn	1.2	1.3	0.6	0.7
2.	J. Harris	2.6	1.7	1.3	0.8
3.	R. Harris	2.1	1.6	1.0	0.8
4.	J. Spruill	1.8	1.1	0.9	0.6
5.	R. Shinn	2.6	2.1	1.3	1.0
6.	D. Rush	1.6	1.7	0.8	0.9
7.	C. Shinn	3.2	2.7	1.6	1.4
8.	S. Thomas	2.7	2.0	1.3	1.0
9.	B. Rye	4.1	1.8	2.0	0.9
10.	J. Fields	0.8	1.1	0.4	0.6
11.	B. Reed	2.3	1.7	1.2	0.9
12.	R. Little	2.4	1.3	1.2	0.7
13.	B. Gosa	2.6	1.6	1.3	0.8
14.	M. Raden	2.4	1.7	1.2	0.9
15.	T. Smitherman	1.8	1.8	0.9	0.9
16.	N. Horn	2.5	2.1	1.3	1.0
17.	H. L. Smith	2.3	1.7	1.2	0.9
18.	C. Winders	0.7	1.1	0.3	0.6

TABLE XII

Comparison of Pre- and Post-California Reading Test Results
for Students in Amory-Aberdeen
Non-Graded Classes (1970-1972)

Child	Sex	C.A.[1]	I.Q.[2]	9/70	5/72	2 Yr. Gain	Ave/per Year
School: Aberdeen							
1. L. Metcalf	F	8-9	73	1.1	2.3	1.2	+0.6
2. R. Heard	F	9-4	79	NR	2.4	1.6	0.8
3. E. Chaney	F	11-4	80	2.0	4.1	2.1	1.1
4. C. Jones	F	8-11	93	1.1	2.5	1.4	0.7
5. D. Gates	F	8-9	95	NR	2.5	2.0	1.0
6. S. Gosa	F	9-7	96	1.6	3.5	1.9	1.0
7. V. Ruth	M	10-1	101	1.4	3.2	1.8	0.9
School: Amory							
8. M. Rinehart	M	10-7	65	1.3	2.6	1.3	+0.7
9. D. Capps	M	12-1	65	NR	2.9	2.1	1.0
10. M. J. Ritter	F	13-4	74	2.9	3.9	1.0	0.5
11. C. Young	M	12-4	79	1.8	3.3	1.5	0.8
12. M. Lindsey	M	10-10	81	NR	2.2	1.4	0.7
13. S. Kennedy	M	12-1	84	3.3	3.9	0.6	0.3
14. T. Langford	M	11-3	86[3]	NR	4.0	3.2	1.6

[1]Chronological Age as of 5/72
[2]Full Scale WISC I.Q.
[3]Slosson I. Q.

TABLE XIII

Comparison of Gains Made on California Reading Tests
Between First and Second Years
in Classes in Amory-Aberdeen Non-Graded Classes (1970-2)

	Gain 1970-1	Gain 1971-2	Total
School: Aberdeen			
1. Metcalf	0.2	1.0	1.2
2. Heard	0.6	1.0	1.6
3. Chaney	1.3	0.8	2.1
4. Jones	0.4	1.0	1.4
5. Gates	0.6	1.4	2.0
6. Gosa	0.6	1.3	1.9
7. V. Ruth	0.2	1.6	1.8
School: Amory			
8. Rinehart	0.3	1.0	1.3
9. Capps	0.9	1.2	2.1
10. Ritter	0.7	0.3	1.0
11. Young	0.6	0.9	1.5
12. Lindsey	0.5	0.9	1.4
13. Kennedy	0.0	0.6	0.6
14. Langford	2.2	1.0	3.2

made normal or better progress in the second year; in Amory, 5 of 7 children made normal or better progress.

Two students, 3 and 10, made less gain the second year; both were older girls. Child 10 developed additional visual difficulties and may have suffered from being separated from her peer group. Child 3 may reflect deceleration that usually takes effect after reading achievement has normalized.

Table XIV compares gains made on word recognition achievement to gains made on the California for Aberdeen-Amory children from 1970-72. In the Aberdeen sample, the word recognition gain was approximately equal to the achievement test gain for all 7 children--an indication that all gains were solid gains in reading performance. In the Amory sample, equivalent gains were registered for 4 children. Children 8 and 12 showed usual EMR pattern and child 13 demonstrated unusual difficulty with contextual reading. He had become farsighted by the end of the second year.

Table XV depicts gains made in reading achievement at each of the non-graded centers during the 1971-72 school year. The Hamilton center continues to be the model center as all children were non-readers after 1 - 2 years of regular school and all made normal or better progress in reading in the non-graded class. By May all but child 2 were within 1/2 year of expected age/grade placement. Normal progress may not seem unusual progress unless you note in Table XV that previous instruction had produced zero gains in all six Hamilton children.

Five of ten Aberdeen children and three of five Amory children made average or better progress during 1971-72. Child 7 in the Aberdeen project is the only child who didn't learn to read during the three years the project operated. He was non-verbal and withdrawn to the extent that only limited testing could be done. Child 8 could not give sufficient answers to be screened for vision difficulties. If prior progress in school can be thought of as a control measure against 1 year's instruction in the non-graded classes, Table XV demonstrates that the non-graded instructional program produced from 2 times to 16 times as much progress as formerly made by 99% of the sample.

Table XVI compares word recognition gains to California achievement gains for the 21 first year children in Table XV. The results are much the same as discussed previously in this report with one exception. Two children, 11 and 14, seem to have been ripe for a sudden gain; each made 3 years gain in 1 year. Since their achievement gains did not increase equally, one has to suppose their recognition of words in context had outstripped their word recognition in isolation. Table B confirms that achievement in word recognition in isolation rose from 1 year below California achievement to one year above--the same phenomenon that was noted in the Hamilton sample previously in this report.

Table B

Comparative Gains of Two Children (1971-72)

	Word Recog. Ach. Level 11/71	5/72	Calif. Ach. Level 11/71	5/72
Dickey	2.2	5.1	3.2	3.9
Crosby	1.7	4.6	2.5	3.6

Table XVII and Table XVIII complete the detailing of achievement gains in reading registered by 102 of the 103 children included in this Title III project. Table XVII acts as a control on Table XV; both indicate that the non-graded instructional program increased the rate of learning to read by many times the child's previous rate in a regular classroom. The 20 children who have a star by their names were returned to the regular classroom after 1 to 2 years of instruction in the non-graded classes. The others moved out of the school district.

In Table XVII, children 4, 10, and 11 were above age/grade placement expected achievement after 1 year. Children 3 and 17 were achieving at a level equal to their age/grade placement.

E. Evaluation of Perceptual-Motor and Language Curriculum

1. Introduction

As indicated in the results of Table I, the 103 children selected for the classes were deficient in language abilities. Other deficiencies discovered in the diagnostic procedure were: (a) inadequate visual-motor ability, (b) mixed laterality, (c) vision difficulties, and (d) speech articulation defects. These are associated physical difficulties that reduce input-output capabilities of the child and restrict his language ability.

A variety of instructional programs (see Treatment, Part III of Evaluation Report) were instituted to strengthen the children's oral language, written language and reading skills. Children with vision difficulties were treated by optometrists and ophthalmologists. A language-speech development program was instituted to correct language and speech-articulation defects.

A perceptual-motor curriculum (refer to Treatment, Part III) was instituted to correct a deficit common to all 103 children in the sample--a condition described as neurological disorganization. Neurological disorganization refers to a central nervous system dysfunction characterized by inadequate mobility, inability to follow objects without losing track, and incomplete or mixed laterality. (See Table I) The concept was first introduced by Carl Delacato in 1959 and expanded by him in his book--The Diagnosis and Treatment of Reading and Speech Disorders, Charles C. Thomas, 1964. It has been the subject of much controversy and ignorance.

"Inadequate mobility--visual pursuit ability and mixed laterality are not causes of reading disabilities but are indications of a dysfunction of the central nervous systems known as neurological disorganization." Simultaneous vision, binocular vision at both farpoint and nearpoint, depth perception, and color perception are also reflections of brain development. The aforestated aspects of vision are learned after the different levels of the brain are developed. (See Neurological Organization Score Sheet in Curriculum Appendix.)

The idea that neurological disorganization may be related to reading, speech and language disorders is based upon assumptions that are logical and verifiable. These assumptions are:

a. Brain maturation proceeds in an orderly manner from the pons, to the midbrain, to the cortex.

b. As each level of the brain matures, further development occurs as a result of environmental stimulation that causes neuronal systems to become operative as part of a visual-motor response pattern. For instance, after the pons matures, he may see something across the room that stimulates him to respond by crawling on his stomach to get it.

c. A central nervous system that is properly organized causes a child when moving to learn to use the opposite arm and leg together in what is known as a cross pattern.

d. Visual functions and visual-motor response systems develop parallel to mobility and result from brain maturation at different levels.

TABLE XIV

Comparison of Achievement Gains
on Silvaroli Word Recognition Test
and Gains on California Reading Test

School: Aberdeen	1970-2 Total Silvaroli WR Gain	1970-2 Total California Gain	Per/year Silvaroli Average Gain	Per/year California Average Gain
1. Metcalf	1.0	1.2	0.5	0.6
2. Heard	1.8	1.6	0.9	0.8
3. Chaney	2.0	2.1	1.0	1.1
4. Jones	1.6	1.4	0.8	0.7
5. Gates	1.8	2.0	0.9	1.0
6. Gosa	2.2	1.9	1.1	1.0
7. Ruth	1.5	1.8	0.8	0.9
School: Amory				
8. Rinehart*	0.8	1.3	0.4	0.7
9. Capps	1.6	2.1	0.8	1.0
10. Ritter	1.1	1.0	0.6	0.5
11. Young*	2.3	1.5	1.2	0.8
12. Lindsey*	0.8	1.4	0.4	0.7
13. Kennedy*	2.2	0.6	1.1	0.3
14. Langford	3.1	3.2	1.6	1.6

*Knew many more words in context than in isolation

TABLE XV

Comparison of Pre- and Post-California Reading Test Results
for Students in Non-Graded Classes
for One Year (1971-2)

Child		Sex	C.A.	I.Q.	9/71	5/72	Gain	Reg. Class Gain Year(s) Before
School: Hamilton								
1.	J. Lucius	M	7-7	80	NR	1.7	+0.9	0.0
2.	J. Hutchinson	M	7-6	80	NR	1.6	0.8	0.0
3.	M. Adams	F	7-7	85	NR	1.6	0.8	0.0
4.	D. Hall	M	7-6	86	NR	2.0	1.2	0.0
5.	P. Smitherman	M	7-4	99	NR	1.6	0.8	0.0
6.	R. White	M	8-0	102	NR	2.1	1.3	0.0
School: Aberdeen								
7.	A. Young	M	9-10	38	NR	NR	0.0	0.0
8.	Marilyn Devould	F	8-5	71	NR	1.1	0.3	0.0
9.	R. K. Light	F	10-1	72	1.2	2.1	0.9	0.05
10.	William Jones	M	7-9	73	NR	1.3	0.5	0.0
11.	Gregg Dickey	M	12-0	73	3.2	3.9	0.7	0.4
12.	S. G. Light	F	10-1	75	1.5	2.1	0.6	0.1
13.	R. Eckford	M	7-10	78	NR	1.6	0.8	0.0
14.	J. Crosby	M	9-6	82	2.5	3.6	1.1	0.5
15.	C. Holley	M	7-10	85	1.3	2.1	0.8	0.3
16.	T. Strong	M	8-7	104	1.3	2.1	0.8	0.1
School: Amory								
17.	R. Anderson	M	9-5	74	1.4	3.0	1.6	0.1
18.	T. Payne	M	9-4	76	1.3	1.8	0.5	0.1
19.	L. Law	F	9-11	76	1.2	1.7	0.5	0.05
20.	P. Barnes	M	8-0	104	1.2	2.0	0.8	0.1
21.	C. Smith	M	9-10	107	2.1	3.6	1.5	0.4

TABLE XVI

Comparison of Gains Made on Silvaroli Word Recognition Test and Gains Made on California Reading Test (1971-2)

	Total Silvaroli Gains	Total California Gains
School: Hamilton		
1. Lucius	0.8	0.9
2. Hutchinson	0.8	0.8
3. Adams	0.6	0.8
4. Hall	0.6	1.2
5. Smitherman	0.7	0.8
6. White	0.8	1.3
School: Aberdeen		
7. Young	0.0	0.0
8. Devould	0.3	0.3
9. R. Light	0.6	0.9
10. Jones	0.5	0.5
11. Dickey*	2.9	0.7
12. S. Light	0.9	0.6
13. R. Eckford	0.4	0.8
14. J. Crosby*	2.9	0.7
15. C. Holley	0.5	0.8
16. T. Strong	0.5	0.8
School: Amory		
17. Anderson	1.7	1.6
18. Payne	0.5	0.5
19. Law	0.7	0.5
20. Barnes	0.4	0.8
21. Smith	2.0	1.5

TABLE XVII

Comparison of Pre- and Post-California Reading Test Results
for Students in Aberdeen Non-Graded Classes
for One Year (1969-70) or (1970-1971)

	Child	Sex	C.A.	I.Q.	9/69	5/70	Gain	Reg. Class Gains Yr(s) Before - Mos.
1.	J. Willis	M	8-5	59	NR	1.6	0.8	0.0
2.	L. Ford	M	10-5	75	1.2	1.9	0.7	0.1
3.	R. West	M	8-4	84	1.2	2.9	0.9	0.2
4.	J. Bowen*	M	9-0	88	2.2	3.9	1.7	0.5
5.	Bobby Hicks*	M	10-4	91	2.2	3.1	0.9	0.5
6.	T. Claxton	M	9-0	99	2.4	3.1	0.7	0.5
7.	Clyde Ward*	M	9-3	102	2.0	3.1	1.1	0.4
					9/70	5/71		
8.	C. Card*	F	9-7	67	2.7	3.5	0.8	0.6
9.	R. Hacker*	M	8-11	88	1.2	1.9	0.7	0.2
10.	S. Griggs*	F	7-6	98	1.1	2.6	1.5	0.3
11.	K. Reeves*	M	7-8	102	1.4	3.3	1.9	0.6
12.	C. Harrell	M	8-6	107	NR	1.7	0.9	0.0
13.	M. E. Ruth*	F	7-6	112	1.2	1.9	0.7	0.4
					9/70	5/71		
14.	J. Welch*	M	8-8	124	1.4	2.6	1.2	0.3
15.	H. Hanson*	M	9-4	111	1.4	3.0	1.6	0.2
16.	C. Cantrell*	F	10-6	99	2.4	3.7	1.3	0.5
17.	S. Trest*	M	7-5	111	1.2	2.2	1.0	0.4
18.	J. Stokes*	M	8-7	75	NR	2.9	2.1	0.0
19.	D. Terry	M	8-2	83	NR	1.3	0.5	0.0

TABLE XVIII

Comparison of Pre- and Post-California Reading Test Results for Students in Amory-Aberdeen Non-Graded Classes (1969-1971)

		Sex	C.A.	I.Q.	11/69	5/71	2 Yr. Gain	Ave/per Year
School: Aberdeen								
1.	G. W. Ruth*	M	8-8	75	NR	2.1	1.3	0.7
2.	W. Allen*	M	8-9	80	NR	3.8	3.0	1.5
3.	D. Langston*	M	9-10	81	1.2	2.7	1.5	0.8
4.	J. West	M	9-4	83	1.2	3.9	2.7	1.4
5.	R. Oliver	M	10-3	86	1.3	3.2	1.9	1.0
School: Amory								
6.	T. White	M	9-5	63	NR	1.5	0.7	0.4
7.	R. Edwards*	M	8-0	64	NR	1.8	1.0	0.5
8.	K. Steinke	M	10-2	67	1.2	2.5	1.3	0.7
9.	L. Lucas*	M	9-3	85	1.4	3.6	2.2	1.1
10.	K. White	M	8-1	88	NR	1.5	0.7	0.4
11.	W. Rakestraw	M	10-2	97	1.8	3.8	2.0	1.0
12.	A. Turnage*	M	8-8	100	1.2	2.6	1.4	0.7
13.	B. Pope*	M	10-3	111	3.0	4.1	1.1	0.6

e. After a child reaches age 7, if the central nervous system is organized properly, he will show a consistent preference for the eye and limb on the same side in any activity that involves eye-limb coordination.
f. Inadequate neurological organization may be a function of child's being deprived of environmental stimulation, having received physical damage to the brain, or a combination of both.
g. Language-visual functions such as reading and language-motor systems such as writing are affected by inadequate neurological organization.

If the above assumptions were correct, then it followed that any perceptual-motor curriculum ought to be built around them. Thus the 103 children included in this sample were administered the neurological organization test and all 103 were found to be neurologically disorganized to some degree. The degree of disorganization was determined by assigning numerical values to each of the subtests and adding up scores for tasks that were satisfactorily performed. Table C indicates value assigned to each subtest. A total score of 22 points represents completed neurological organization.

Table XIX shows the degree of neurological disorganizations noted in 24 students included in the Hamilton non-graded classes. Scores ranged from 1 to 18. These were representative of children's scores in the other non-graded classes in Amory and Aberdeen except that one Amory child with cerebral palsy had a 0 score. By comparing neurological organization (N.O. hereafter) test scores to reading levels, the following were derived for future predictive purposes:

a. Children with scores of 6 or below on the N.O. test will be unable to learn to read.
b. Children with scores 7 - 14 should learn to read some if poor teaching, cultural deprivation, or speech disorders do not reduce desire and opportunity to do so.
c. Children with scores of 15 - 19 should (given good instruction) achieve a reading level that shows no more than 1 - 3 months loss per year.
d. Children with scores of 22 should achieve an average or better reading level if good instruction is available.

2. Treatment

Since all the children were disorganized to some degree, the children were taught correct mobility patterns and given visual pursuit training until these tasks could be performed satisfactorily. Practice on these was then limited to a 15 - 20 minute period each day.

Then the Kephart blackboard and rhythm exercises and the Belgaw walking board, balance boards, trampoline board, and visual-motor bats were incorporated to integrate lower level skills into balance, rhythm and eye-hand-foot coordination activities. Finally, the Frostig visual perception sheets were used to develop nearpoint eye-hand coordination. No attempt was made to reduce tonality or to transfer laterality.

Table XIX shows the N.O. scores as of May, 1972, for the 24 Hamilton children. As can be seen, most of the children only had a score of 19 for they had not completely lateralized. Five children (5, 6, 7, 15, and 23) were completely organized. Three others (9, 10, and 17) had reduced scores because binocular skills and/or depth perception were still inadequate. A check made in January, 1971, and May, 1971, indicated that 19 level had been reached by most of the children. The five children who lateralized did so after the perceptual-motor curriculum was continued into the second year. Three other children in the Aberdeen classes had completely lateralized, one at the end of two years and two at the end of one year.

3. Interpretation of Results

It is not possible to parcel out what each separate part of a curriculum contributes to over all development. The dynamic environment of a school would have to be reduced

TABLE C

Numerical Values Assigned to Subtests
of Neurological Organization Test

	Value
Pons Tasks:	
1. Crawling on stomach in cross pattern	1
2. Simultaneous vision (Telebinocular Test 1)	1
Midbrain Tasks:	
1. Crawling on hands and knees in cross pattern	1
2. Following an object held by himself through four planes: vertical, horizontal, circular, and diagonal	4
3. Binocular vision: Telebinocular Tests of lateral and vertical convergence and fusion at both farpoint and nearpoint	5
Cortical Tasks:	
1. Walking in a cross pattern	1
2. Depth perception	1
3. Color perception (figure-ground discrimination)	1
4. Following an object held by tester through four planes	4
Laterality (all or none)	3
Shows consistent preference for eye, hand and foot on same side of body.	

TABLE XIX

Gains Made in Neurological Organization,
I.Q. and Psycholinguistic Ages
for Hamilton Non-Graded Students (1970-2)

Years 1970-72	C.A.*	9/70 N/O[1]	5/72 NO[2]	Gain	Total Gains WISC Scales V	P	FS	Final FS	Gain PLA	Final PLA
1. J. Shinn	10-1	7	19	12	12	23	19	71	+16	7-1
2. J. Harris	10-6	6	19	13	19	25	26	72	-	-
3. R. Harris	12-4	9	19	10	10	14	15	61	29	7-3
4. J. Spruill	8-9	6	19	13	9	31	13	77	-	-
5. R. Shinn	9-0	7	22	15	4	22	14	80	26	6-3
6. D. Rush	9-4	8	22	14	8	19	15	82	-	-
7. C. Shinn	11-6	14	22	8	13	7	9	76	13	7-6
8. S. Thomas	11-7	14	19	5	7	21	12	79	27	8-6
9. B. Rye	11-11	1	15	14	15	35	24	79	-	-
10. J. Fields	8-7	11	16	5	4	24	15	88	22	6-4
11. B. Reed	11-7	9	19	10	10	9	11	87	9	7-11
12. R. Little	8-3	8	19	11	2	18	8	85	19	6-7
13. B. Gosa	11-7	8	19	11	0	10	1	78	14	7-8
14. M. Raden	10-6	13	19	6	0	12	3	84	25	9-0
15. T. Smitherman	11-11	18	22	4	7	6	7	89	7	7-11
16. N. Horn	8-4	8	19	11	5	18	9	94	21	7-7
17. H. L. Smith	12-3	7	19	12	3	0	0	85	7	8-7
18. C. Winders	9-0	8	19	12	0	12	4	95	26	8-7
			5/71							
19. J. Stokes[a]	8-7	9	19	10	6	25	16	91	12	7-3
20. D. Terry*	8-4	14	19	5	5	4	5	88	0	5-11
21. C. Cantrell	10-6	15	19	4	10	23	18	99	-	10-6
22. S. Trest	7-5	7	19	12	4	35	20	111	14	6-11
23. H. Hanson*	9-4	19	22	3	0	23	10	111	11	8-9
24. J. Welch	8-8	16	17	1	0	8	0	124	6	7-4

*Chronological age as of May, 1972

[a]Children 19-24 were in project 1970-1971.

to non-life if one were able to do so. It is not possible to establish an absolute cause-and-effect relation between the perceptual-motor curriculum and improvement in school tasks. For instance, there were 41 children at the beginning of the project who recognized 0 - 2 words in isolation. The neurological organization test indicated 29 of the 41 were sufficiently organized to have learned to read some. Environmental deprivation, inadequate instruction, and speech difficulties seem to have been contributions to the child's inability to profit from previous instruction.

According to Dr. James Wilson, psychological consultant to the project, certain subtests on the WISC and ITPA are somewhat sensitive to the effects of perceptual-motor training. They were used, therefore, as criterion tests. Table XIX shows the changes that occurred in the WISC Verbal (V), Performance (P), and Full Scale (FS) scores, the total increase in ITPA psycholinguistic age (PLA) and the final psycholinguistic age registered by each of the 24 Hamilton children. As neurological organization scores increased, parallel rises on these tests were noted for some children.

Only four of the 24 children made significant gains on the WISC verbal scale. (An eleven point gain is necessary for significance because of the WISC's standard error of measurement, which is 20). The WISC Performance Scale is often used for the diagnosis of visual perception difficulties. Significant and usually large gains were registered by 17 of the 24 children on the Performance Scale.

Because of the Performance Scale gains, thirteen of the Full Scale gains were significant. The result was that instead five of the thirteen EMR children moved into the LD range. The results should also indicate the hazard in using IQ scores in assigning children to special education classes.

The most outstanding case in the Hamilton sample was child 9. (A video tape available on loan was built around Bryan.) He was diagnosed as a cretin with an IQ of 44. He had not been able to stay in school in previous years due to his extreme hyperactivity. His major improvement in reading and on the WISC scales developed as he became better organized neurologically. Complete binocularity has not yet developed and his future progress should be followed to see if he continues to improve or regresses once he is returned to a regular classroom.

Increases in Psycholinguistic Ages persisted over the two years. Test retest data was available for 14 of the two-year children and five of the six one-year children. Eight of the two-year children's PLA growth exceeded an expected growth of 18 months. Three of the six one-year children made gains that exceeded the nine months in the class. The same kind of result was noted in both the Amory and Aberdeen classes.

In summary, the Perceptual-Motor Curriculum appears to have produced continuous gains in the visual-motor, visual-perception functioning in the children in the project. The gains appear to be significant for 23 of the 63 children for whom data was available. Complete organization was achieved for eight children.

There is no way of knowing why lateralization was not achieved for most children. It is possible that insufficient time was spent on the organization exercises as part of the perceptual-motor curriculum. No attempt was made to change handedness, reduce tonality, or use the procedures prescribed by Delacato to change eye dominance. It is also possible that at the Amory and Aberdeen centers more children with actual brain damage were included. Twenty-one of twenty-nine children who were in those centers in 1970 to 1972 had visual difficulties that persisted despite treatment from optometrists and ophthalmologists.

All the children but two improved considerably their levels of reading with the majority of them making normal progress (See Reading Evaluation) by May, 1972. If

supplementary aid could be continued until all their reading retardation was gone. most would obtain a functional reading level of ninth grade--a prognosis that many of the children did not have three years ago.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

Of the 103 children involved in instruction in the class, 101 obtained achievement gains that would allow them to read independently as well as under instruction. Seventy-eight of the children were non-readers and may have remained so if they had not been included in the non-graded classes. The criterion for improvement included gains in comprehension as well as in word recognition.

Conclusions

The following conclusions seem warranted from evidence collected:

1. The Reading Curriculum (see Interim Report, 1971) seems to be well enough designed to teach all children to read to accelerate progress in learning to read.
2. Children who complete the reading sequence through all levels included (see Addendum, Interim Report) should have a middle third to fourth grade achievement level.
3. Although the reading instructional program produced considerable acceleration in the rate of learning to read, it was not sufficient to overcome previous years' losses in reading achievement. Normal gains of 1 achievement year per school year should continue if the regular school will have them read at their instructional level. With supplementary instruction in reading only, 12 of the 32 children who had been in the program 2 years should show normal achievement by May, 1973.
4. The younger the children were when put into the non-graded classes the closer their performance came to normalizing.
5. The usual loss in sight word mastery and acquisition can be overcome by sufficient instruction.
6. IQ is not a cause of reading disabilities and should not be used to predict potential levels in reading.

Recommendations

1. Children who exhibit characteristics noted in the screening process should receive two years of instruction in a non-graded class modeled after this project. They, then, should be moved to regular classrooms, and if achievement is not normalized, should be given continued supplementary instruction in reading only.
2. Children between ages 7 - 10 when found to be in need should receive 1 year's instruction in a non-graded class, a second year of 1/2 day in reading perceptual motor activities, and then continued supplementary instruction in reading only until achievement is normalized.
3. Children, 11 and up, should be given reading and perceptual-motor training but left in regular classrooms. Supplementary instruction should continue throughout their public school life if necessary.
4. The reading-language curriculum developed in this class should become the model for all classrooms in the elementary school.